



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)  
BOARD AND CODE ADMINISTRATION DIVISION

## NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION  
11805 SW 26 Street, Room 208  
Miami, Florida 33175-2474  
T (786) 315-2590 F (786) 315-2599  
[www.miamidade.gov/economy](http://www.miamidade.gov/economy)

Greenheck Fan Corporation  
P.O. Box 410  
Schofield, WI 54476

### SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

### DESCRIPTION: Model ESS-502D Aluminum Louver

**APPROVAL DOCUMENT:** Drawing No. ESS-502D, titled "ESS-502D Louver", Sheets 1 through 16 of 16, dated 04/27/2009, prepared by Greenheck Fan Corporation, signed and sealed by Chander P. Nangia, P.E., bearing the Miami-Dade County Product Control renewal stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

### MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

**LABELING:** Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews NOA # 09-0519.14 and consists of this page 1 and evidence page E-1, as well as approval document mentioned above.

The submitted documentation was reviewed by Carlos M. Utrera, P.E.



*Handwritten signature and date:*  
09/16/2014

NOA No. 14-0624.16  
Expiration Date: August 05, 2019  
Approval Date: September 25, 2014  
Page 1

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

- A. **DRAWINGS** *"Submitted under NOA # 09-0519.14"*
1. Drawing No. **ESS-502D**, titled "ESS-502D Louver", sheets 1 through 16 of 16, dated 04/27/2009, prepared by Greenheck Fan Corporation, signed and sealed by Chander P. Nangia, P.E.
- B. **TESTS** *"Submitted under NOA # 09-0519.14"*
1. Test report on 1) Uniform Static Air Pressure Test per FBC, TAS 202-94  
2) Large Missile Impact Test per FBC, TAS 201-94,  
3) Cyclic Wind Pressure Test per FBC, TAS 203-94,  
along with marked-up drawings and installation diagram of Model ESS-502D fixed aluminum louvers, prepared by Architectural Testing, Inc., Test Report No. **89882.01-602-18**, dated 04/30/2009, signed and sealed by Joseph A. Reed, P.E.
- C. **CALCULATIONS** *"Submitted under NOA # 09-0519.14"*
1. Structural load calculations, prepared by Greenheck Fan Corporation, dated 04/14/2009, signed and sealed by Chander P. Nangia, P.E.
- D. **QUALITY ASSURANCE**
1. Miami-Dade Department of Regulatory and Economic Resources (RER)
- E. **MATERIAL CERTIFICATIONS**
1. None.
- F. **STATEMENTS**
1. Statement letter of code compliance to 2010 FBC issued by Chander P. Nangia, P.E., dated 06/19/2014, signed and sealed by Chander P. Nangia, P.E.
- "Submitted under NOA # 09-0519.14"*
2. No financial interest letter issued by Chander P. Nangia, P.E., dated 04/27/2009, signed and sealed by Chander P. Nangia, P.E.

  
09/16/2014

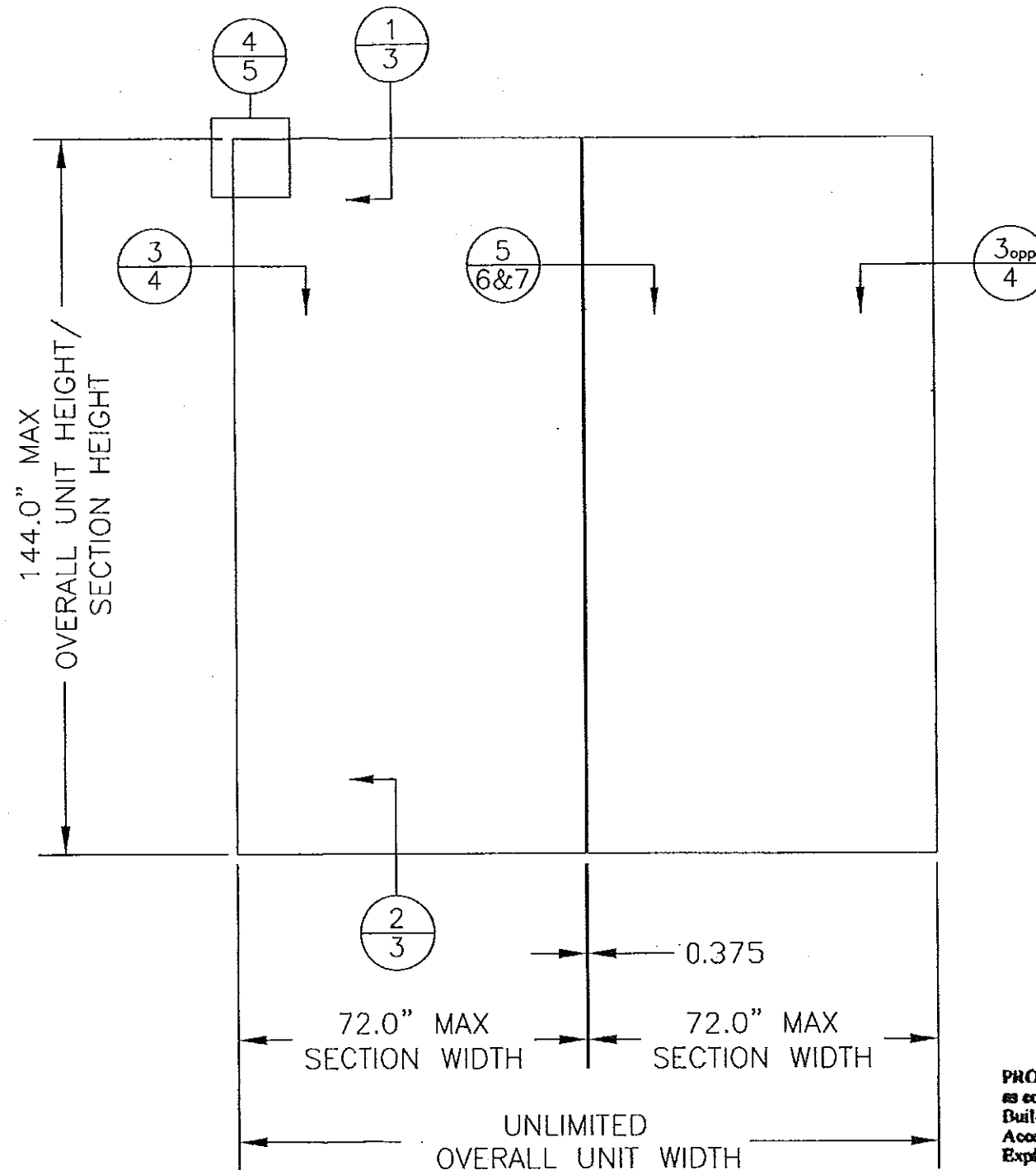
Carlos M. Utrera, P.E.  
Product Control Examiner  
NOA No. 14-0624.16

Expiration Date: August 05, 2019  
Approval Date: September 25, 2014

DETAIL #  
PAGE #

DETAIL CALLOUT (TYPICAL)

1 LOUVER ELEV.  
SHORT LOUVER LAYOUT



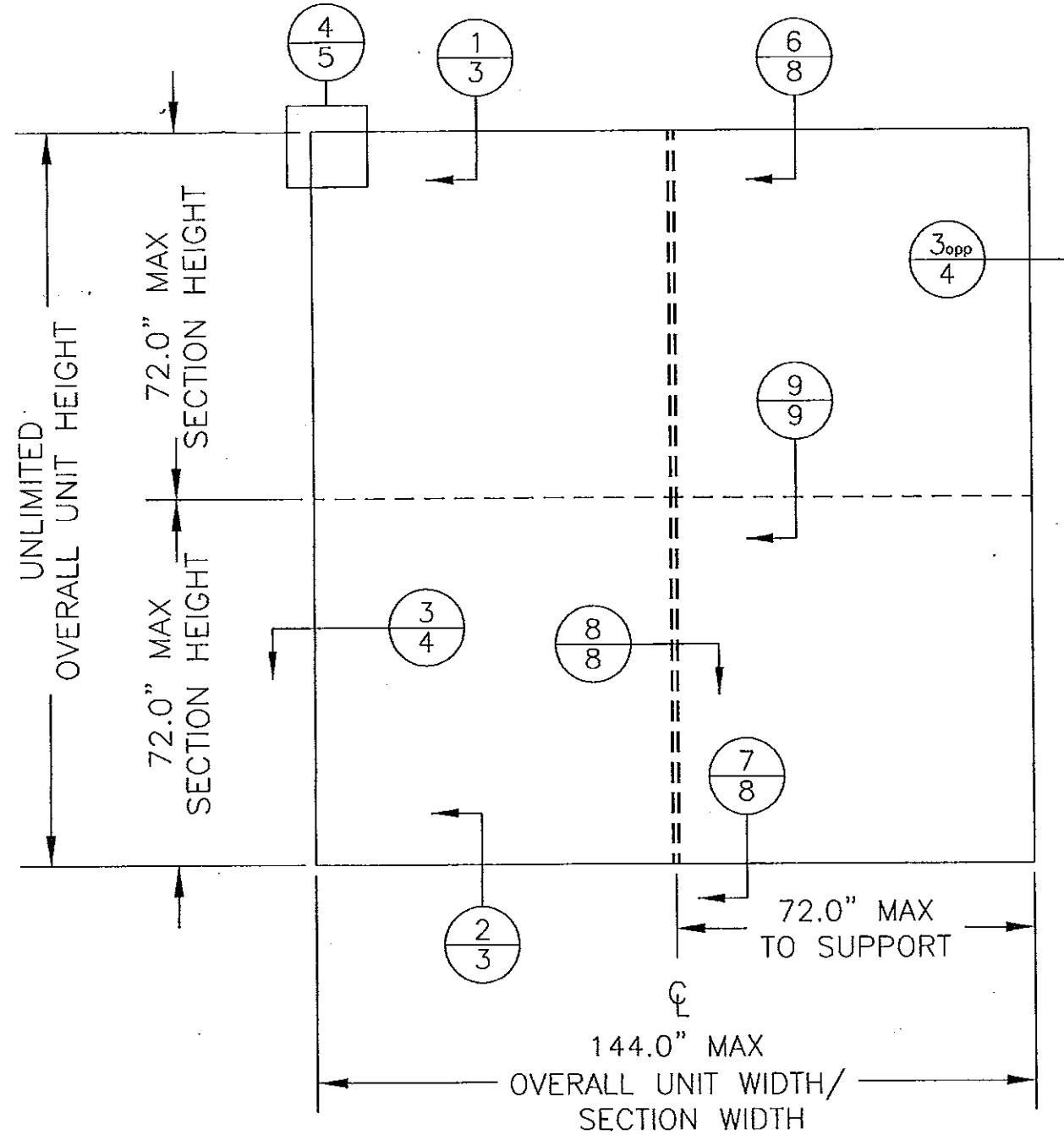
PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No 14-0624-16  
Expiration Date 08/05/2019  
By *[Signature]*  
Miami Dade Product Control

NOTE: MULLION REQUIRED ONLY IF BOTH OF  
THE FOLLOWING ARE TRUE: OVERALL UNIT WIDTH  
IS >72", AND SECTION HEIGHT IS >72".

CHANDER P. NANGIA P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09	SCALE 3/8"=1'	SHEET NO. 1 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER		
<i>[Signature]</i> MAY 12 2009		SHORT LOUVER LAYOUT ELEVATION CONFIGURATION		
Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0519.14 Miami Dade Product Control Division By <i>[Signature]</i>				

3 LOUVER ELEV.  
LONG LOUVER LAYOUT, SPLICED JAMBS & BLADE SUPPORT

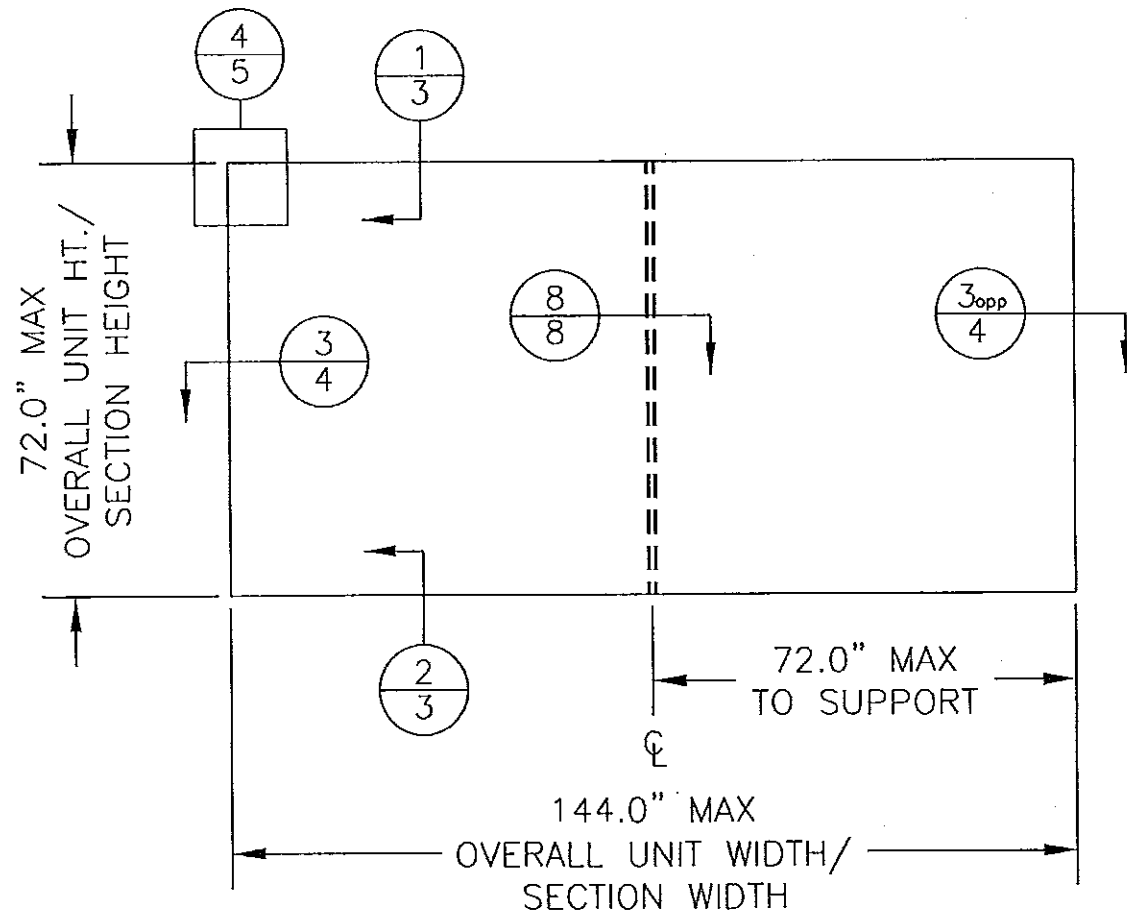


NOTE: BLADE SUPPORT REQUIRED ONLY IF SECTION WIDTH IS >72".


PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 14-0624.16  
Expiration Date 08/05/2019  
By *[Signature]*  
Miami Dade Product Control

CHANDER P. NANGIA PE.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

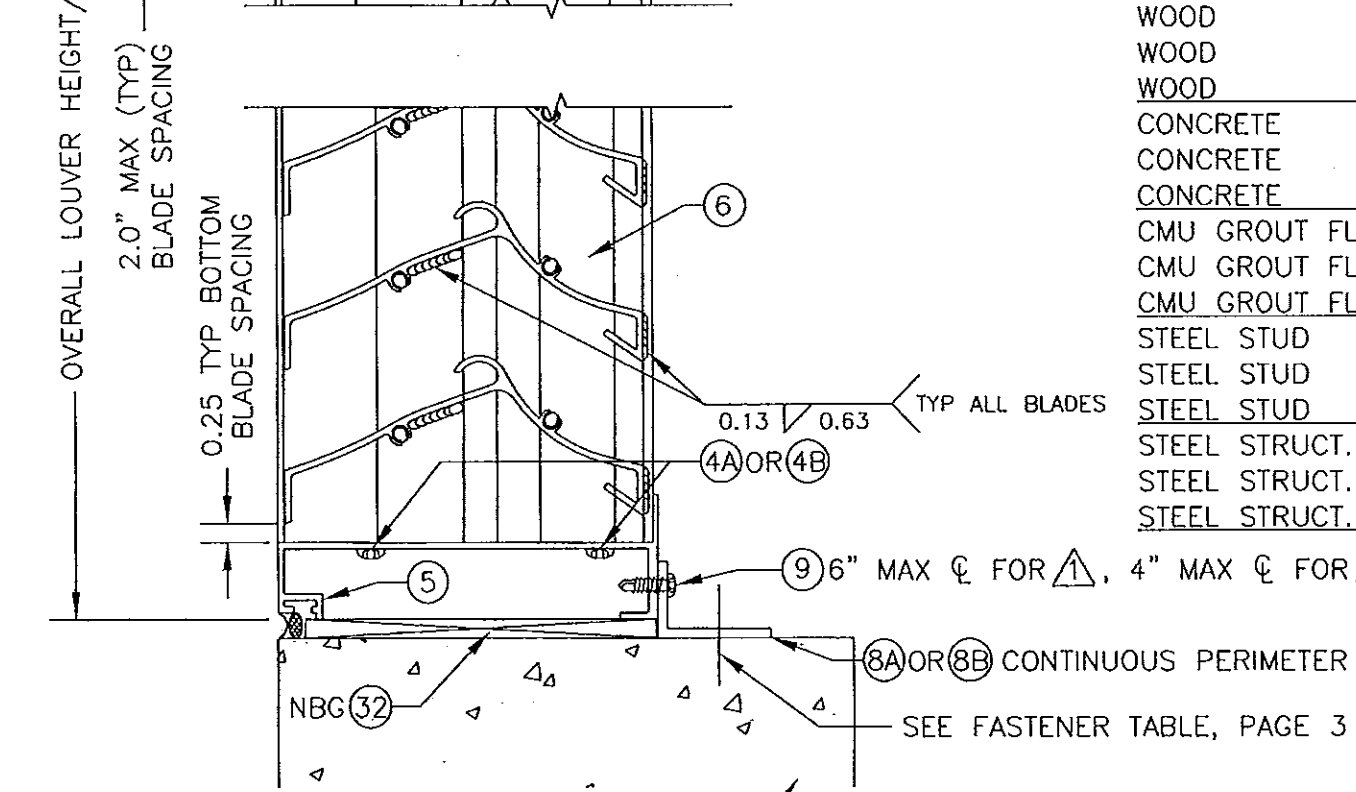
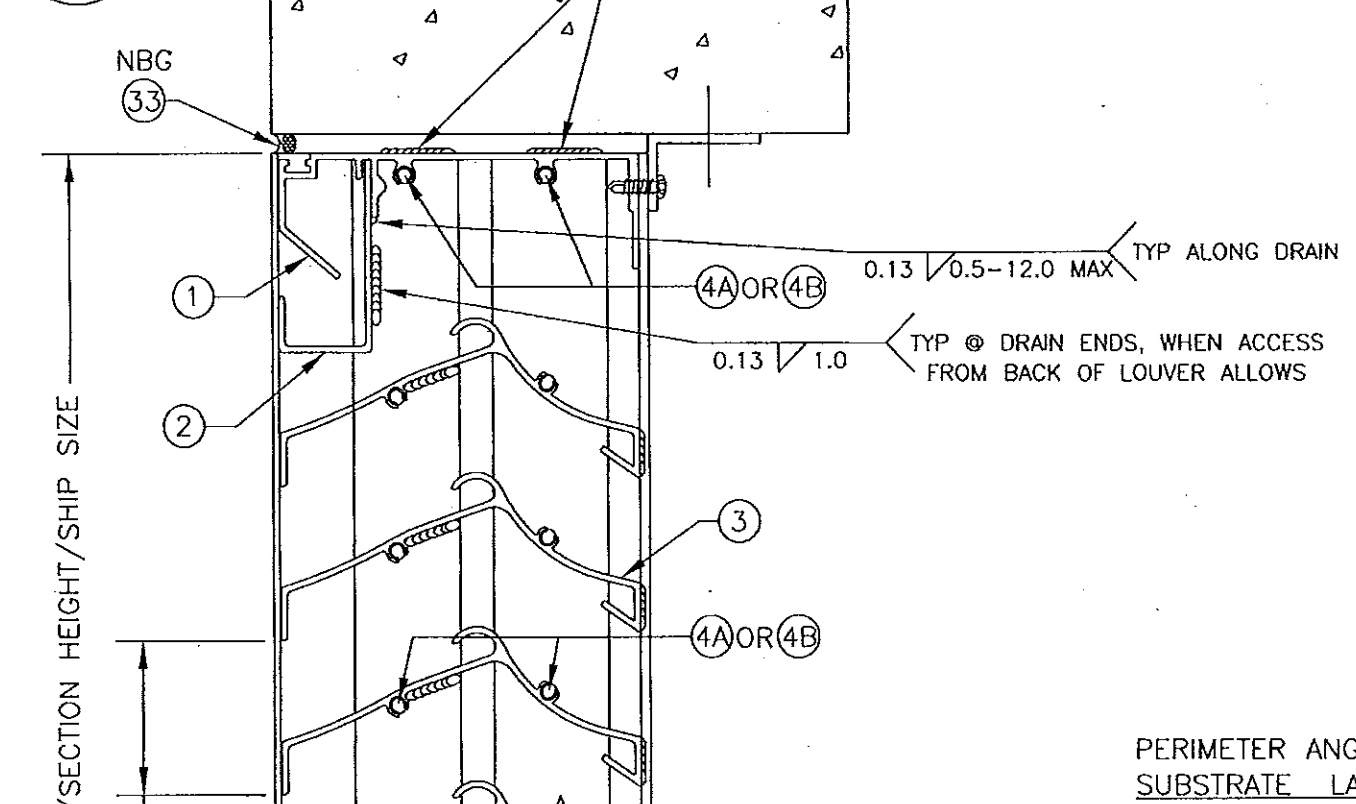
2 LOUVER ELEV.  
LONG LOUVER LAYOUT



NOTE: BLADE SUPPORT REQUIRED ONLY IF SECTION WIDTH IS >72".

DRAWN BY M STEELE	DATE 4/27/09	SCALE 3/8"=1'	SHEET NO. 2 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER		
		LONG LOUVER LAYOUT ELEVATION CONFIGURATIONS		
 <b>MAY 12 2009</b>		Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0519.14 Miami Dade Product Control Division <i>[Signature]</i> By <i>[Signature]</i>		

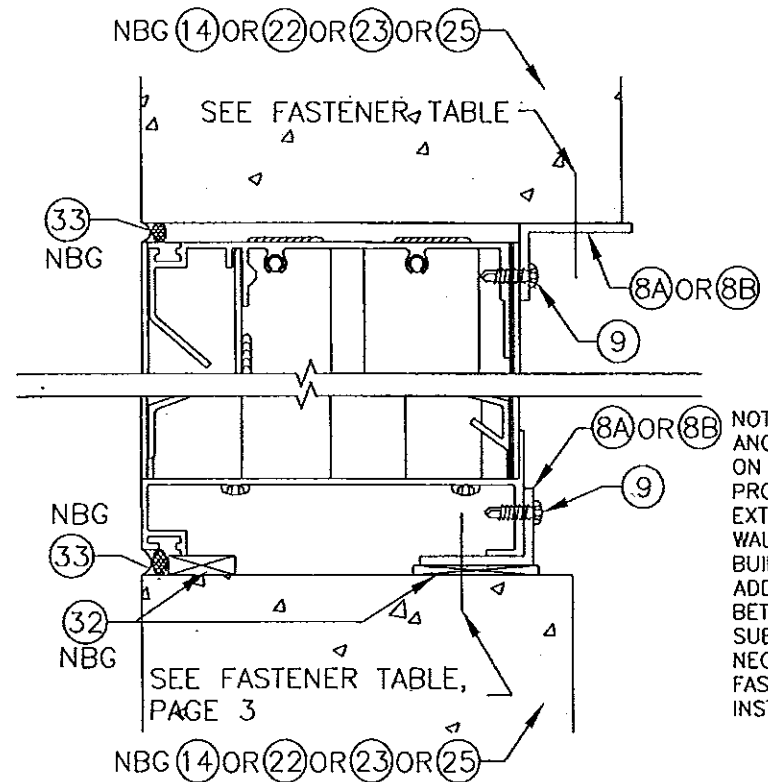
1 HEAD DETAIL  
3 SCALE: 1:3



2 SILL DETAIL  
3 SCALE: 1:3

NBG (14) OR (22) OR (23) OR (25)  
NOTE FOR CMU: BLOCK IS GROUT FILLED AROUND OPENING. (MIN 2000PSI)

OPTIONAL CONTINUOUS ANGLE CONFIGURATION, FOR THIS PAGE ONLY



NOTE: CONTINUOUS PERIMETER ANGLE MAY BE POSITIONED ON JAMBS WITH ANGLE LEG PROJECTED TOWARD EXTERIOR OR INTERIOR OF WALL. VALID FOR ALL BUILDING SUBSTRATE TYPES. ADDITIONAL SPACING BETWEEN LOUVER AND SUBSTRATE MAY BE NECESSARY DUE TO FASTENER HEAD-LOUVER INSTALLATION CLEARANCE.

PERIMETER ANGLE SUBSTRATE FASTENER TABLE (FASTENERS NOT BY MANUFACTURER):

SUBSTRATE	LAYOUT "A"	MIN	FASTENER	SPACING & MIN EDGE DISTANCE
WOOD	1	G=0.55	27	9" O.C. MAX, 1.5" MIN WOOD EDGE DISTANCE
WOOD	2	G=0.55	27	4" O.C. MAX, 1.5" MIN WOOD EDGE DISTANCE
WOOD	3	G=0.55	27	4" O.C. MAX, 1.5" MIN WOOD EDGE DISTANCE
CONCRETE	1	2000PSI	21	6" O.C. MAX, 1.5" MIN CONCRETE EDGE DISTANCE
CONCRETE	2	2000PSI	21	3" O.C. MAX, 1.5" MIN CONCRETE EDGE DISTANCE
CONCRETE	3	2000PSI	21	3" O.C. MAX, 1.5" MIN CONCRETE EDGE DISTANCE
CMU GROUT FLD.	1	2000PSI	21	6" O.C. MAX, 1.5" MIN CMU EDGE DISTANCE
CMU GROUT FLD.	2	2000PSI	21	3" O.C. MAX, 1.5" MIN CMU EDGE DISTANCE
CMU GROUT FLD.	3	2000PSI	21	3" O.C. MAX, 1.5" MIN CMU EDGE DISTANCE
STEEL STUD	1	14GA	24	6" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STUD	2	14GA	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STUD	3	14GA	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STRUCT.	1	0.375	24	6" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STRUCT.	2	0.375	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STRUCT.	3	0.375	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE

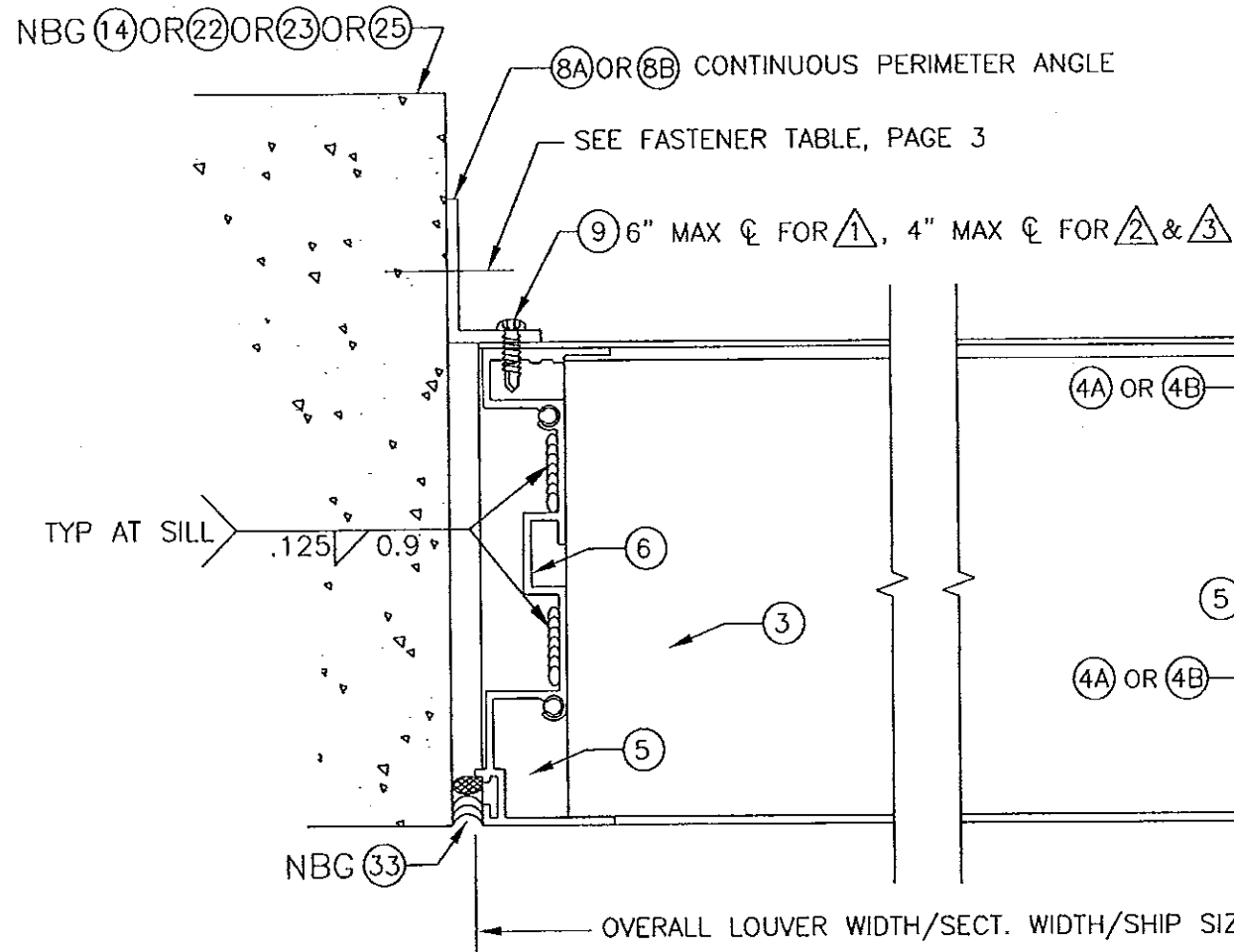
PRODUCT RENEWED as complying with the Florida Building Code  
Acceptance No 14-0624.16  
Expiration Date 08/05/2019  
By [Signature]  
Miami Dade Product Control

CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY  
M STEELE  
DATE  
4/27/09  
SCALE  
1:2.5  
SHEET NO.  
3 OF 16  
CAD DRAWING NO.  
ESS-502D

GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410  
TITLE  
ESS-502D LOUVER  
DETAILS - HEAD/SILL

MAY 12 2009  
Approved as complying with the Florida Building Code  
Date 08/05/2009  
NOAH 07-0579.14  
Miami Dade Product Control  
Division  
[Signature]



NOTE: CONTINUOUS PERIMETER ANGLE MAY BE POSITIONED ON JAMBS WITH ANGLE LEG PROJECTED TOWARD EXTERIOR OR INTERIOR OF WALL. VALID FOR ALL BUILDING SUBSTRATE TYPES. ADDITIONAL SPACING BETWEEN LOUVER AND SUBSTRATE MAY BE NECESSARY DUE TO FASTENER HEAD-LOUVER INSTALLATION CLEARANCE.

SEE FASTENER TABLE, PAGE 3

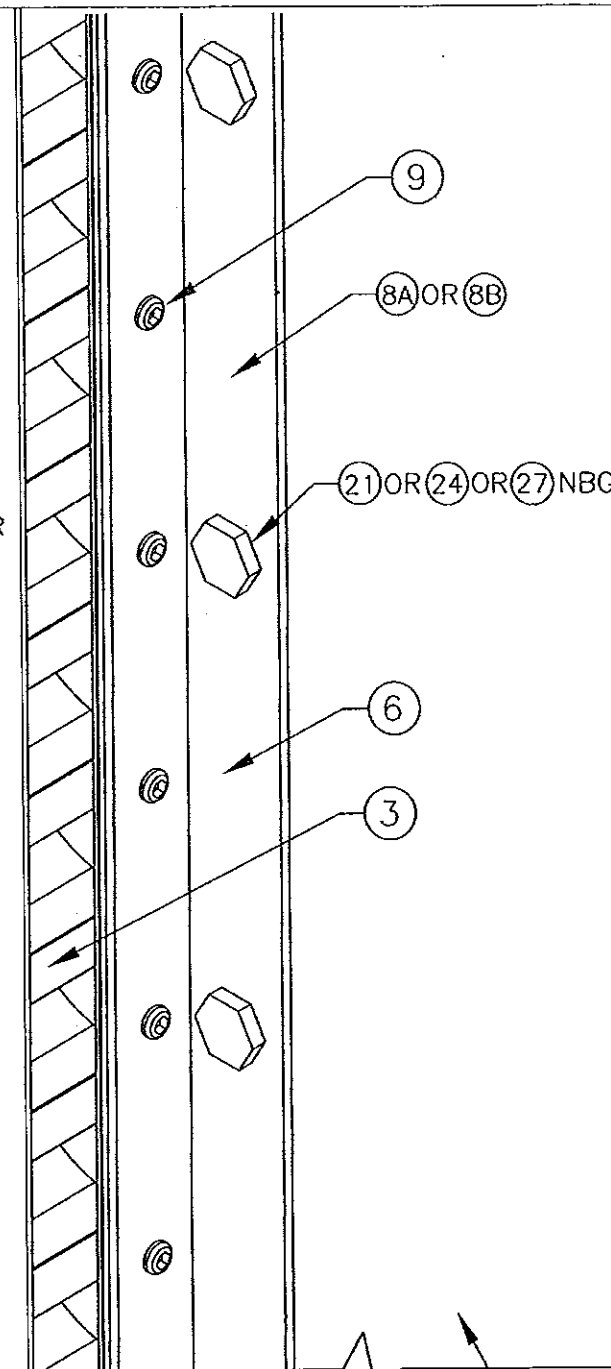
NOTE FOR CMU: BLOCK IS GROUT FILLED AROUND OPENING. (MIN 2000PSI)

NBG=NOT BY MANUFACTURER

3 JAMB DETAIL  
4 SCALE: 1:2  
\*\*SEE "3 ISO" FOR ISOMETRIC DETAIL\*\*

3opp JAMB DETAIL  
4 SCALE: 1:2

PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 19-0674-K6  
Expiration Date 08/05/2009  
By [Signature]  
Miami Dade Product Control



CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

3 ISO JAMB DETAIL  
4 SCALE: 1:2

DRAWN BY M STEELE	DATE 4/27/09	SCALE 1:2	SHEET NO. 4 OF 16	CAD DRAWING NO. ESS-502D
		TITLE ESS-502D LOUVER		
P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		DETAILS - JAMBS		
Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0579-14 Miami Dade Product Control Division By [Signature]				

1. & 3

4 CONTINUOUS ANGLE, INTERIOR VIEW  
5 SCALE: 1:2

CONTINUOUS PERIMETER ANGLE

VARIES, BUT NEVER MORE THAN MIN FASTENER SPACING

CONTINUOUS PERIMETER ANGLE

VARIES, BUT NEVER MORE THAN MIN FASTENER SPACING

SEE FASTENER TABLE, PAGE 3

SEE FASTENER TABLE, PAGE 3

SEE FASTENER TABLE, PAGE 3

TYPICAL ALL CORNERS


(VIEW FROM INTERIOR)

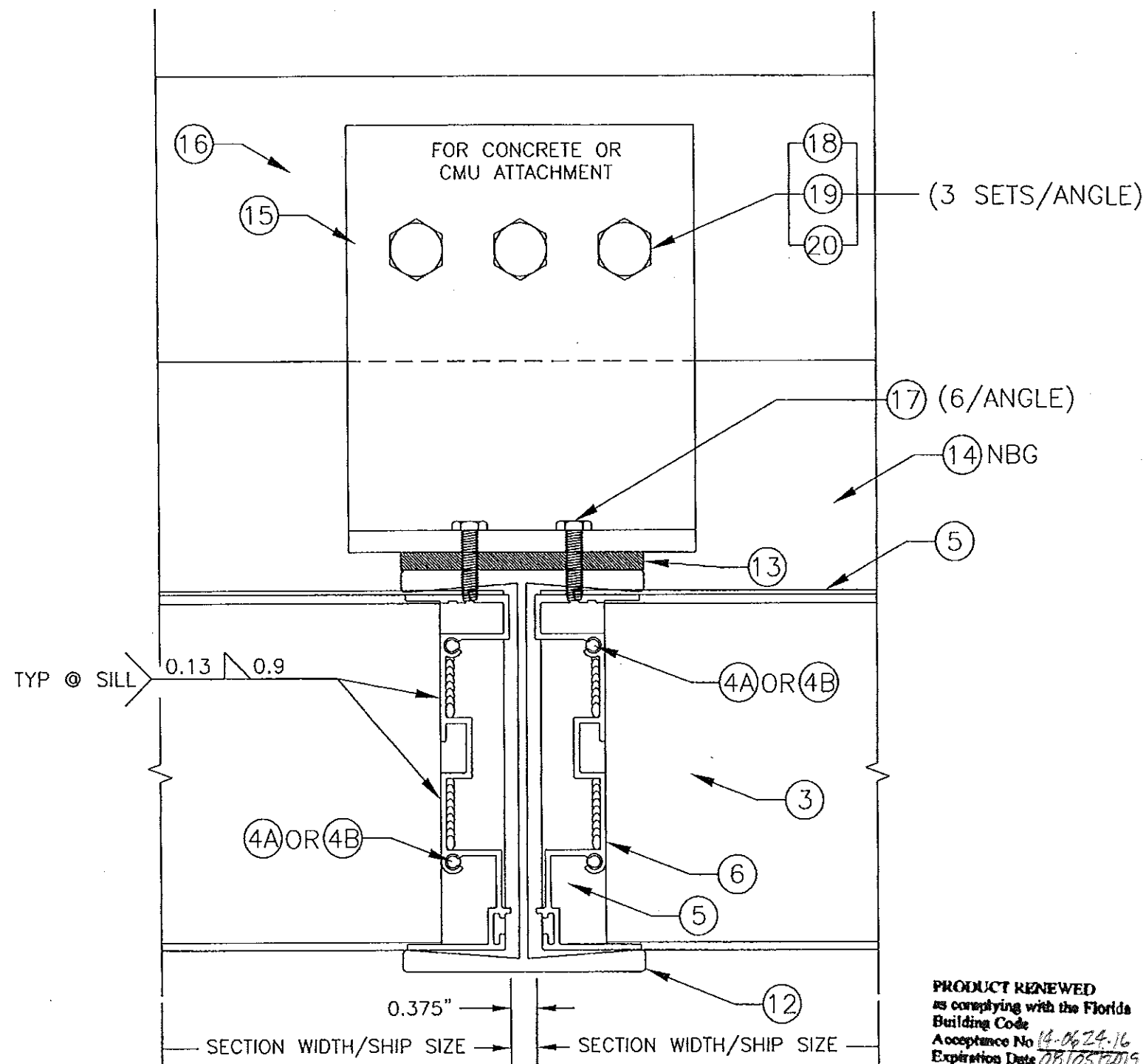
6.0 C/L SPACING FOR TRIANGLE 1  
4.0 C/L SPACING FOR TRIANGLES 2 & 3

6.0 C/L SPACING FOR TRIANGLE 1  
4.0 C/L SPACING FOR TRIANGLES 2 & 3

(BUILDING CONDITION NOT SHOWN)

CHANDER P. NANGIA, PE  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

 <b>GREENHECK</b> P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	DRAWN BY <b>M STEELE</b>	DATE <b>4/27/09</b>
	SCALE <b>1:2</b>	
	SHEET NO. <b>5 OF 16</b>	
	CAD DRAWING NO. <b>ESS-501D</b>	
TITLE <b>ESS-502D LOUVER</b>		
DETAILS - CONTINUOUS ANGLE		

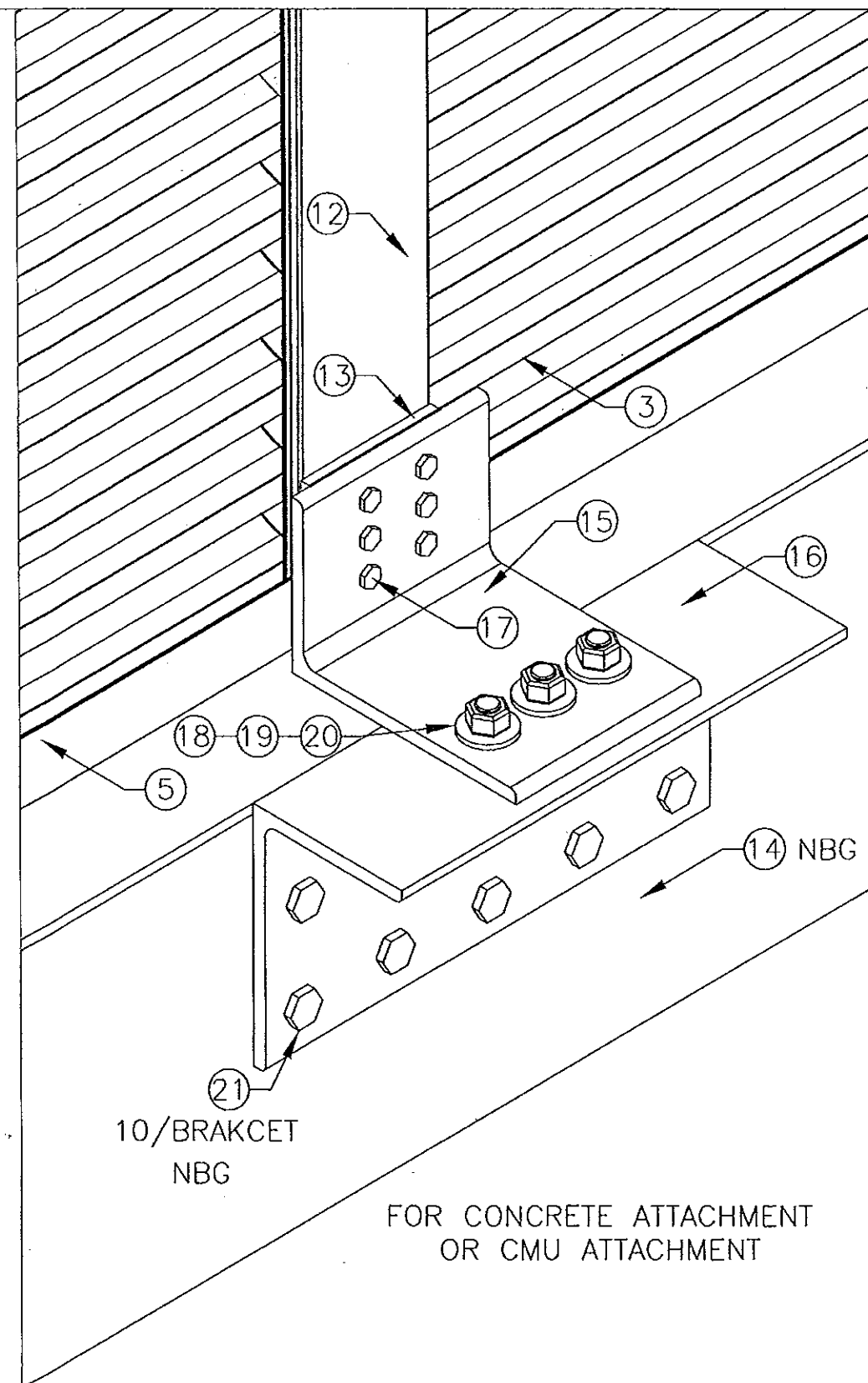


PRODUCT RENEWED  
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Building Code  
Acceptance No 14-0624-16  
Expiration Date 08/05/2019  
By *[Signature]*  
Miami Dade Product Control

5A  
6  
"1" MULLION DETAIL  
SCALE: 1:2  
\*\*SEE "5 ISO" FOR ISOMETRIC DETAIL\*\*


NOTE: CONTINUOUS PERIMETER  
ANGLE NOT SHOWN ON THIS PAGE.

NBG=NOT BY MANUFACTURER



5A ISO  
6  
ISOMETRIC (MULLION DETAIL)  
(TYPICAL @HEAD AND SILL)  
SCALE: 1:3

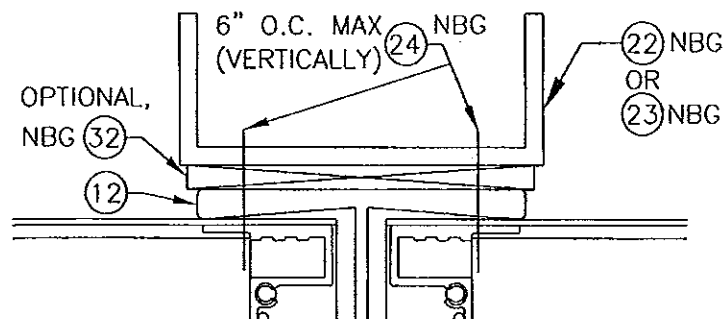
CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09	SCALE VARIES	SHEET NO. 6 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER		
DETAILS - CMU & CONCRETE MULLION SUPPORT				
 MAY 12 2009 Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0379-14 Miami Dade Product Control Division By <i>[Signature]</i>				

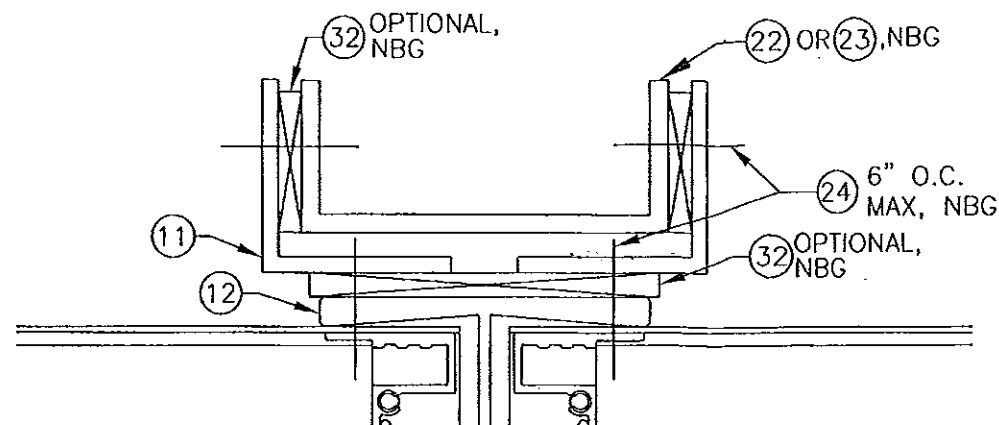


5 B STEEL MULLION ATTACHMENT 1  
7 SCALE: 1:2

FOR STRUCTURAL STEEL OR STEEL STUD ATTACHMENT  
OPTION ONE



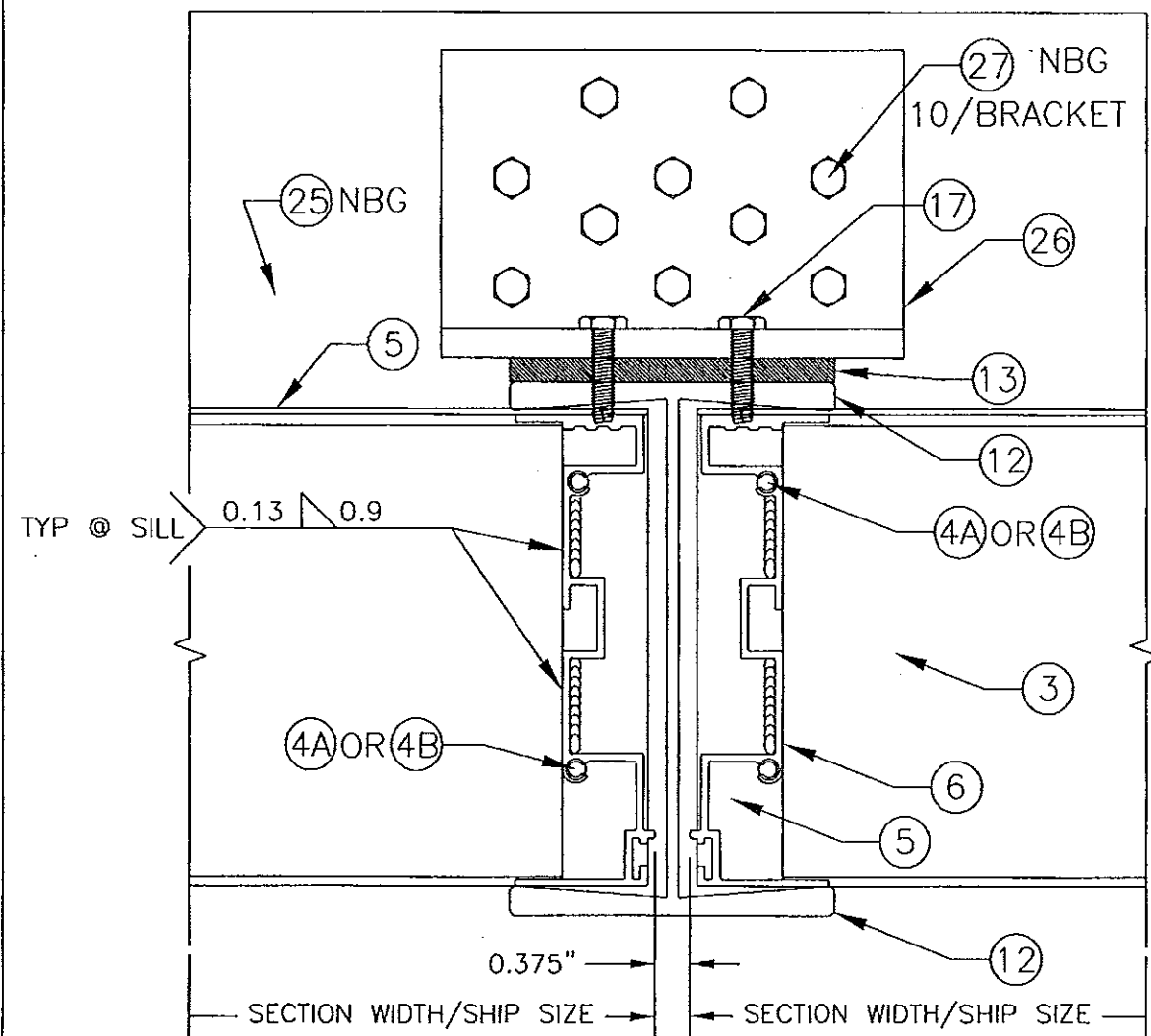
FOR STRUCTURAL STEEL OR STEEL STUD ATTACHMENT  
OPTION TWO



5 C STEEL MULLION ATTACHMENT 2  
7 SCALE: 1:2

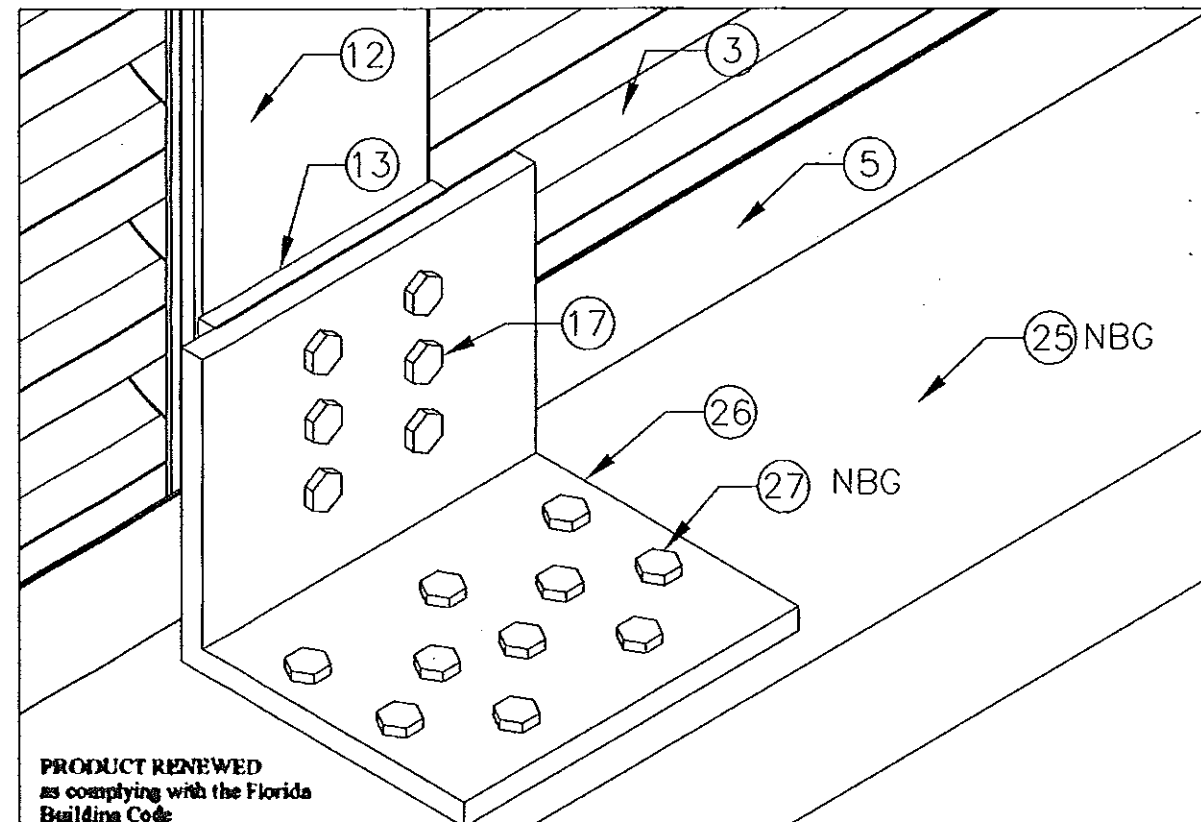
NOTE: STRUCTURAL STEEL AND STEEL STUD MULLION SUPPORT TYPES (NOT BY GREENHECK) MUST BE CAPABLE OF WITHSTANDING ALL LOADS TRANSFERRED BY THE LOUVER SECTIONS AT THE TOP AND BOTTOM OF THE VERTICAL MULLION CONDITION(S). THE FORMULA TO DETERMINE THE TRANSFERRED POINT LOAD IN POUNDS IS (SECTION WIDTH FEET X SECTION HEIGHT FEET X 110 PSF)/2.

5 D WOOD MULLION ATTACHMENT  
7 SCALE: 1:2  
\*\*SEE "5 D ISO" FOR ISOMETRIC DETAIL\*\*



NOTE: CONTINUOUS PERIMETER  
ANGLE NOT SHOWN ON THIS PAGE.

NBG=NOT BY MANUFACTURER



PRODUCT RENEWED  
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Acceptance No 14-0624-16  
Expiration Date 08/05/2019  
By *[Signature]*  
Miami Dade Product Control

5 D ISO WOOD MULLION ATTACHMENT  
7 SCALE: 1:2

CHANDER P. NANGIA <sup>PE</sup>  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY M STEELE  
DATE 4/27/09

SCALE 1:2  
SHEET NO. 7 OF 16

GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

ESS-502D LOUVER  
DETAILS - STEEL STUD,  
STRUCTURAL STEEL, &  
WOOD MULLION SUPPORT

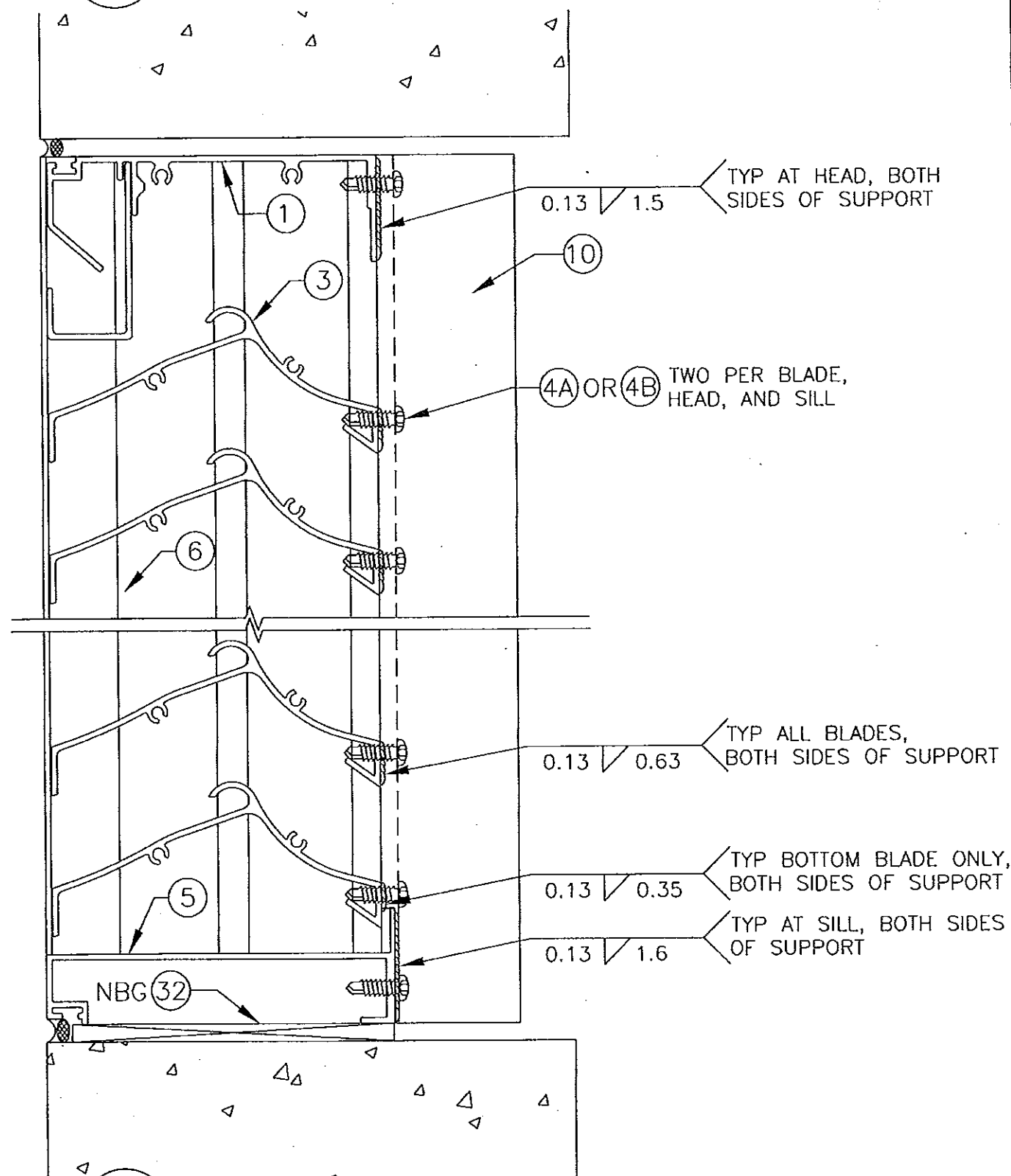
*[Signature]*

MAY 12 2009

Approved as complying with the  
Florida Building Code  
Date 08/25/2009  
NOA# 09-0519-14  
Miami Dade Product Control  
Division  
By *[Signature]*

6  
8

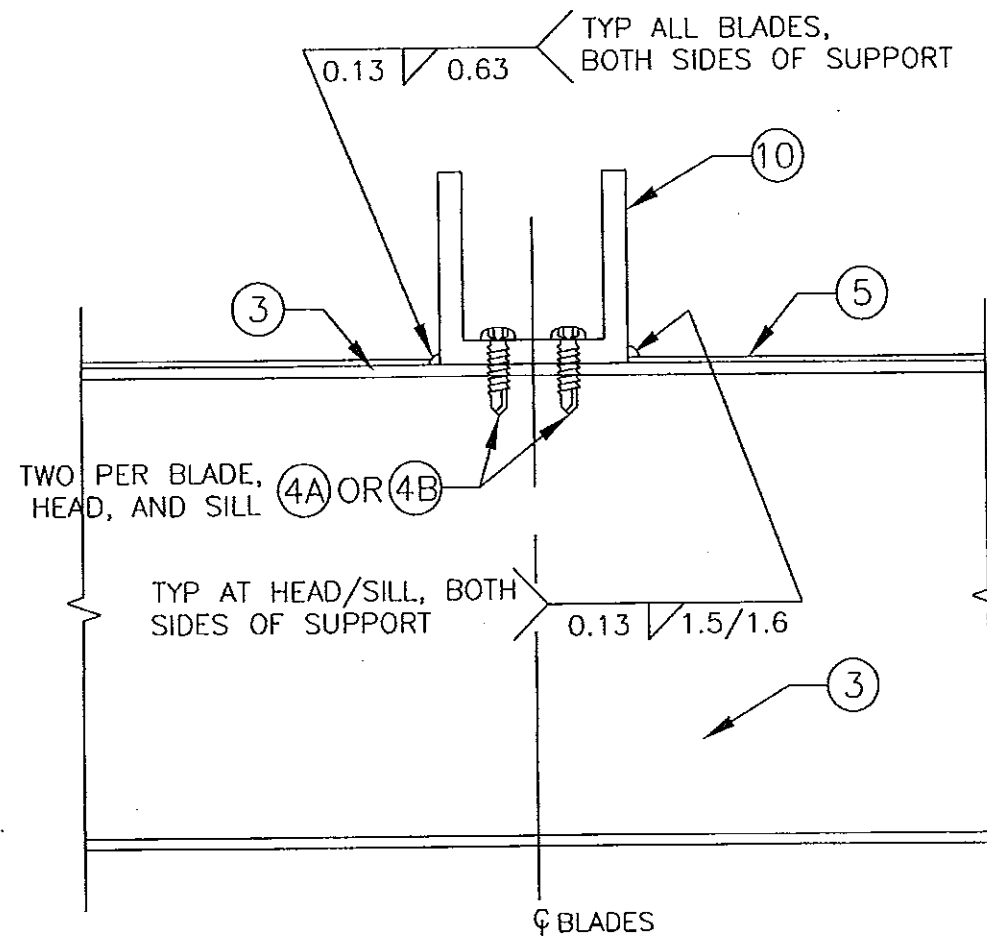
BLADE SUPPORT HEAD DETAIL (SECTIONS >72" WIDE) SIDE VIEW  
SCALE: 1:2



7  
8

BLADE SUPPORT SILL DETAIL (SECTIONS >72" WIDE) SIDE VIEW  
SCALE: 1:2

NBG=NOT BY MANUFACTURER



8  
8

BLADE SUPPORT DETAIL (SECTIONS >72" WIDE) TOP VIEW  
SCALE: 1:2

PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 14-0624.16  
Expiration Date 05/05/2019  
By *[Signature]*  
Miami Dade Product Control

CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY  
M STEELE

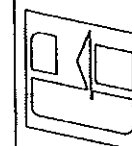
DATE  
4/27/09

SCALE  
1:2

SHEET NO.  
8 OF 16

CAD DRAWING NO.  
ESS-502D

GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410



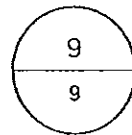
TITLE  
ESS-502D LOUVER

DETAILS - BLADE SUPPORT

*[Signature]*

MAY 12 2009

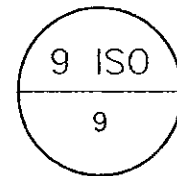
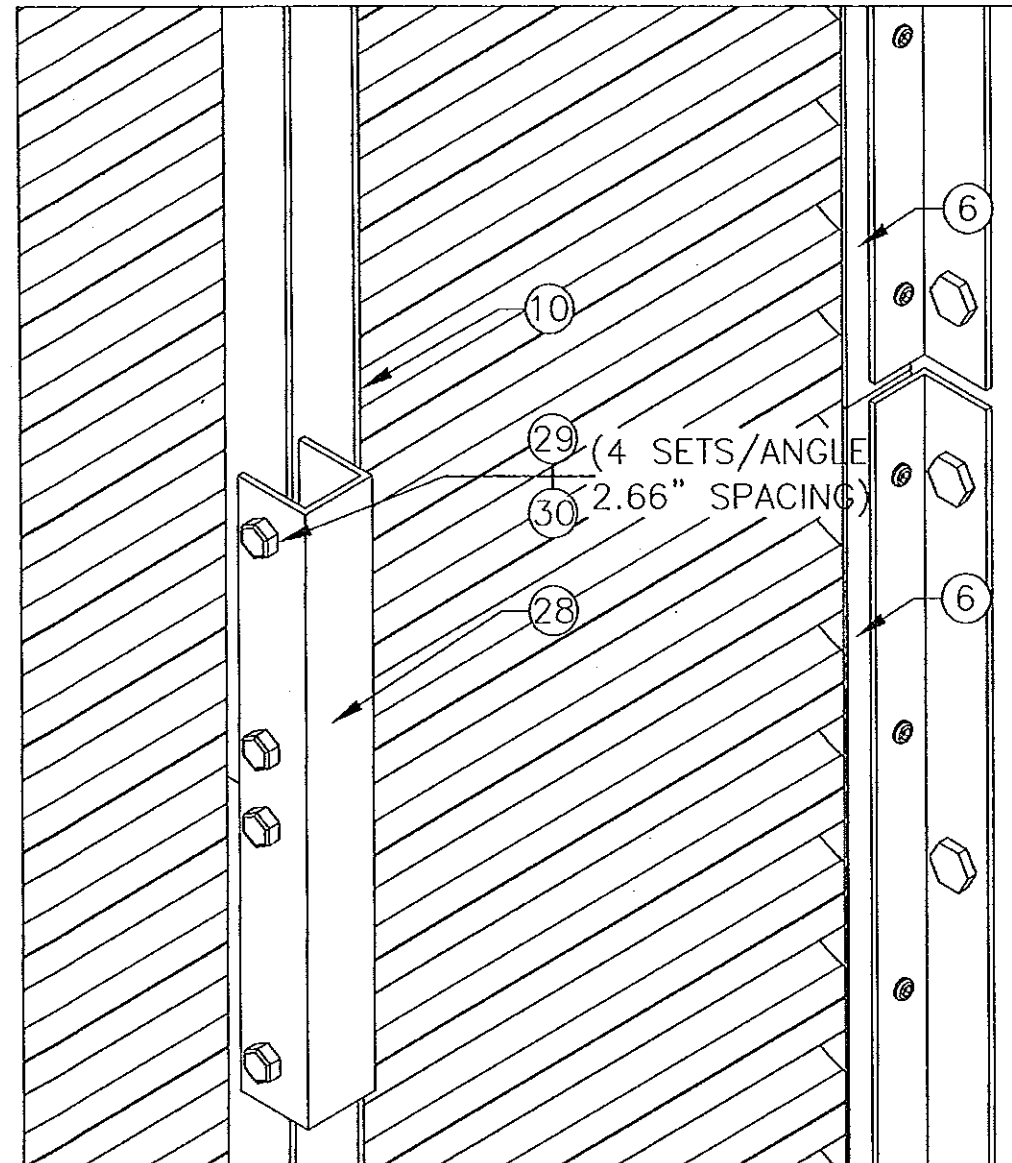
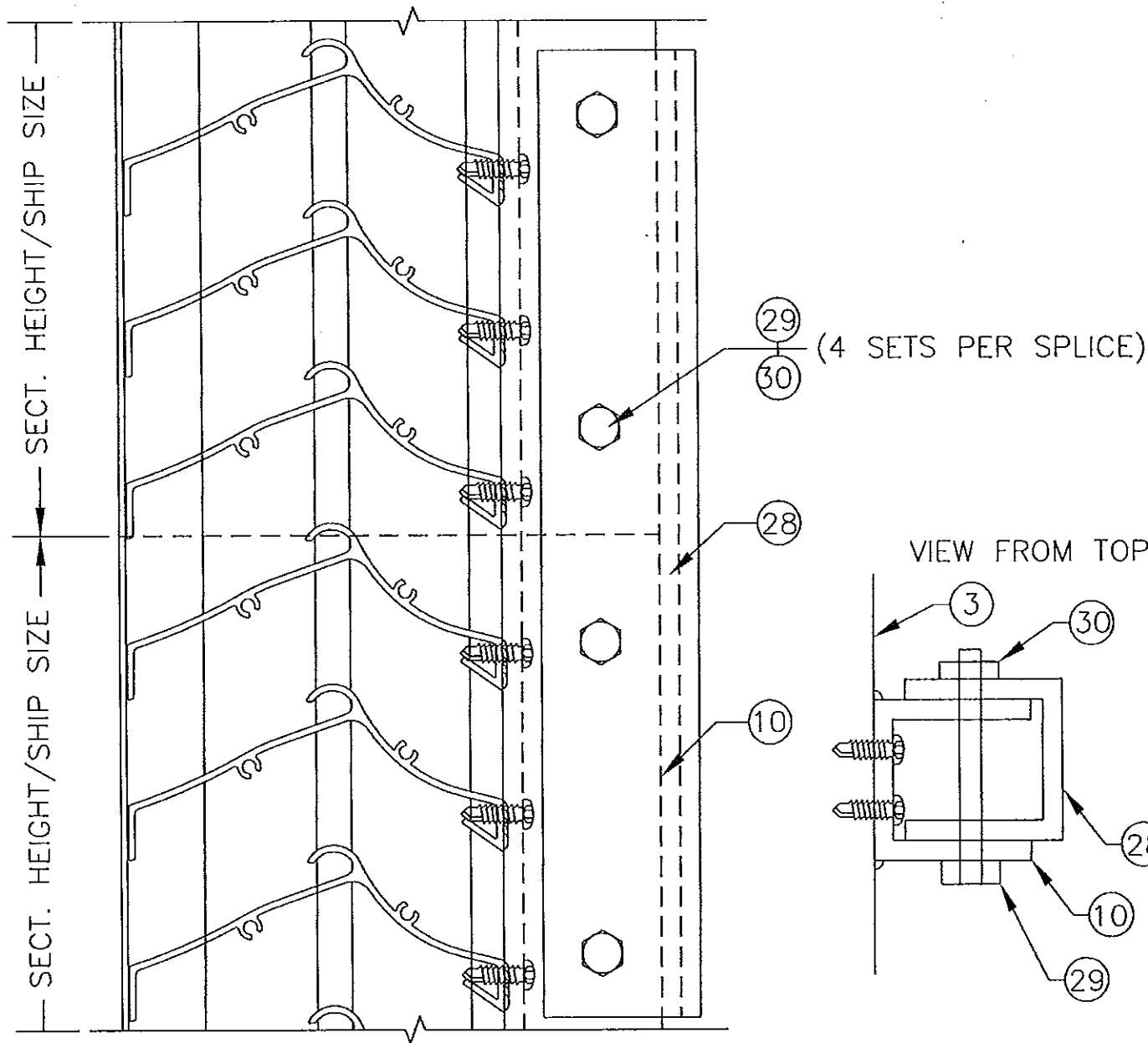
Approved as complying with the  
Florida Building Code  
Date 08/05/2009  
NOA# 09-10519.14  
Miami Dade Product Control  
Division *[Signature]*  
By *[Signature]*



VERTICAL SPLICE/STACK DETAIL

SCALE: 1:2

\*\*SEE "9 ISO" FOR ISOMETRIC DETAIL\*\*

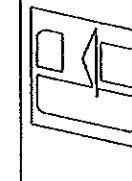


ISOMETRIC (SPLICE/STACK DETAIL)

SCALE: 1:3

PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 14-0624.16  
Expiration Date 08/05/2009  
By *[Signature]*  
Miami Dade Product Control

CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938



GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

TITLE

ESS-502D LOUVER

DETAILS - SPLICED BLADE  
SUPPORT

DRAWN BY DATE

M STEELE 4/27/09

SCALE

VARIABLES

SHEET NO.

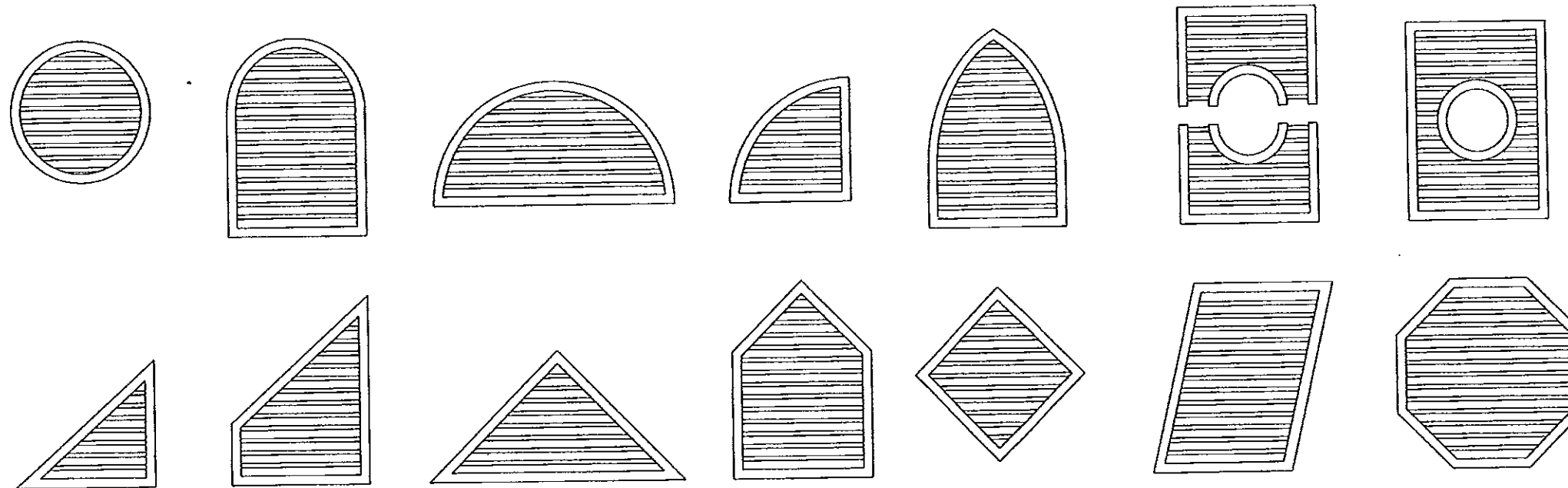
9 OF 16

CAD DRAWING NO.

ESS-502D

Approved as complying with the  
Florida Building Code  
Date 08/05/2009  
NOA# 04-0519.14  
Miami Dade Product Control  
Division  
By *[Signature]*

BELOW ARE THE SHAPE UNITS THAT THE NOA WILL ALLOW

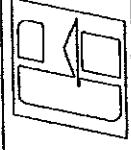



NOTES:

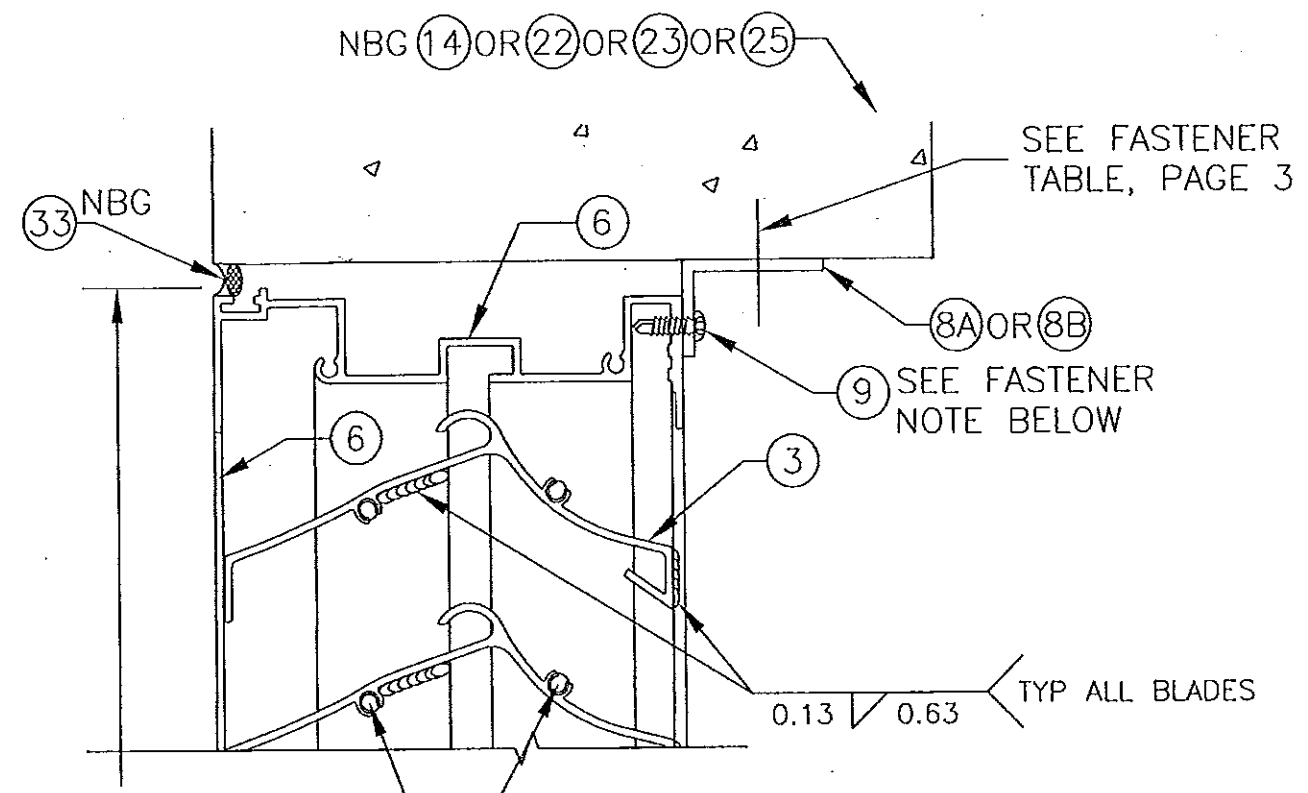
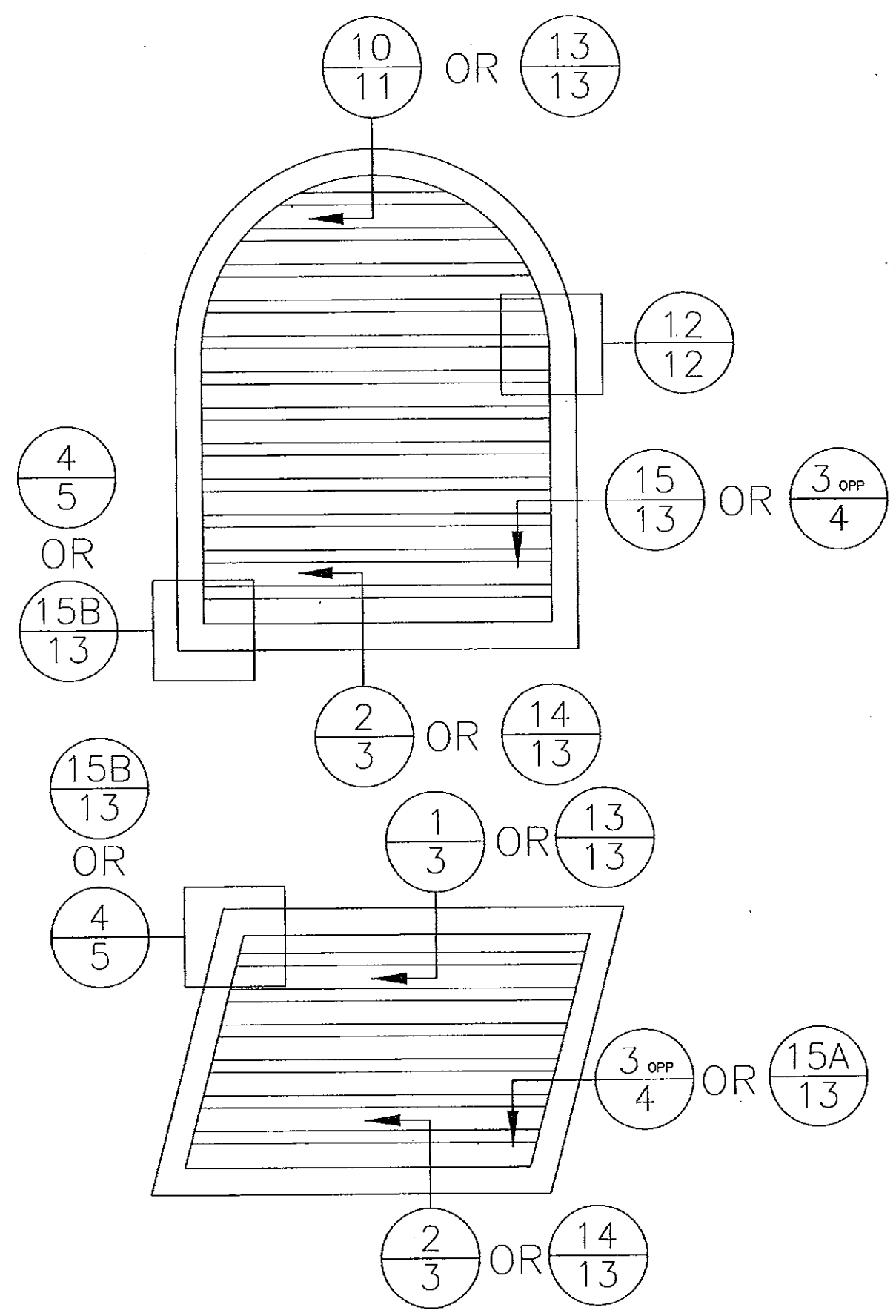
1. OTHER SHAPES MAY APPLY PROVIDING THEY ARE SIMILAR TO THOSE SHOWN AND HAVE CONSTRUCTION AS DESCRIBED IN THIS PACKET.
2. ALL SHAPE LOUVERS ARE TO HAVE THE SAME WIDTH, HEIGHT, AND PRESSURE RESTRICTIONS AS RECTANGULAR LOUVERS, AND MAY BE SPLICED/STACKED VERTICALLY AND HORIZONTALLY (MULLED UNITS) IN THE SAME MANNER AS RECTANGULAR LOUVERS.
3. IF THE SHAPE LOUVER SECTION WIDTH EXCEEDS 72", A BLADE SUPPORT IS REQUIRED.
4. A MULLION REQUIRED FOR SHAPE LOUVERS ONLY IF BOTH OF THE FOLLOWING ARE TRUE: OVERALL UNIT WIDTH IS >72", AND SECTION HEIGHT IS >72".
5. FOLLOW THE SAME GUIDELINES AS NON-SHPAED UNITS FOR FASTENING OF SHAPE UNITS TO THE BUILDING CONDITION.

PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 14-0624.16  
Expiration Date 28/05/2019  
By [Signature]  
Miami Dade Product Control

**CHANDER P. NANGIA** PE.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

 <b>GREENHECK</b> P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	DRAWN BY <b>M STEELE</b>	DATE <b>4/27/09</b>
	SCALE <b>0.5"=1'</b>	SHEET NO. <b>10 OF 16</b>
TITLE <b>ESS-502D LOUVER</b>		
SHAPE STYLES, ELEVATION CONFIGURATIONS		
CAD DRAWING NO. <b>ESS-502D</b>		
<div style="text-align: center;">   <b>MAY 12 2009</b> </div>		
Approved as complying with the Florida Building Code Date <u>08/05/2009</u> NOA# <u>04-0579.14</u> Miami Dade Product Control Division <u>[Signature]</u> By <u>[Signature]</u>		

4 TYPICAL SHAPE LOUVER CALLOUTS



OVERALL LOUVER HEIGHT/  
SECTION HEIGHT/  
SHIP SIZE

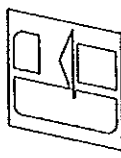

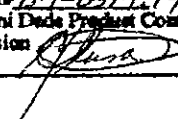
FASTENER NOTES FOR (9):  
6" MAX  $\varnothing$  FOR  $\triangle 1$ , 4" MAX  $\varnothing$  FOR  $\triangle 2$  &  $\triangle 3$

10 SHAPES HEAD DETAIL  
11 SCALE: 1:2

PRODUCT RENEWED  
as complying with the Florida  
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Acceptance No 14-0624-16  
Expiration Date 08/05/2019  
By *[Signature]*  
Miami Dade Product Control

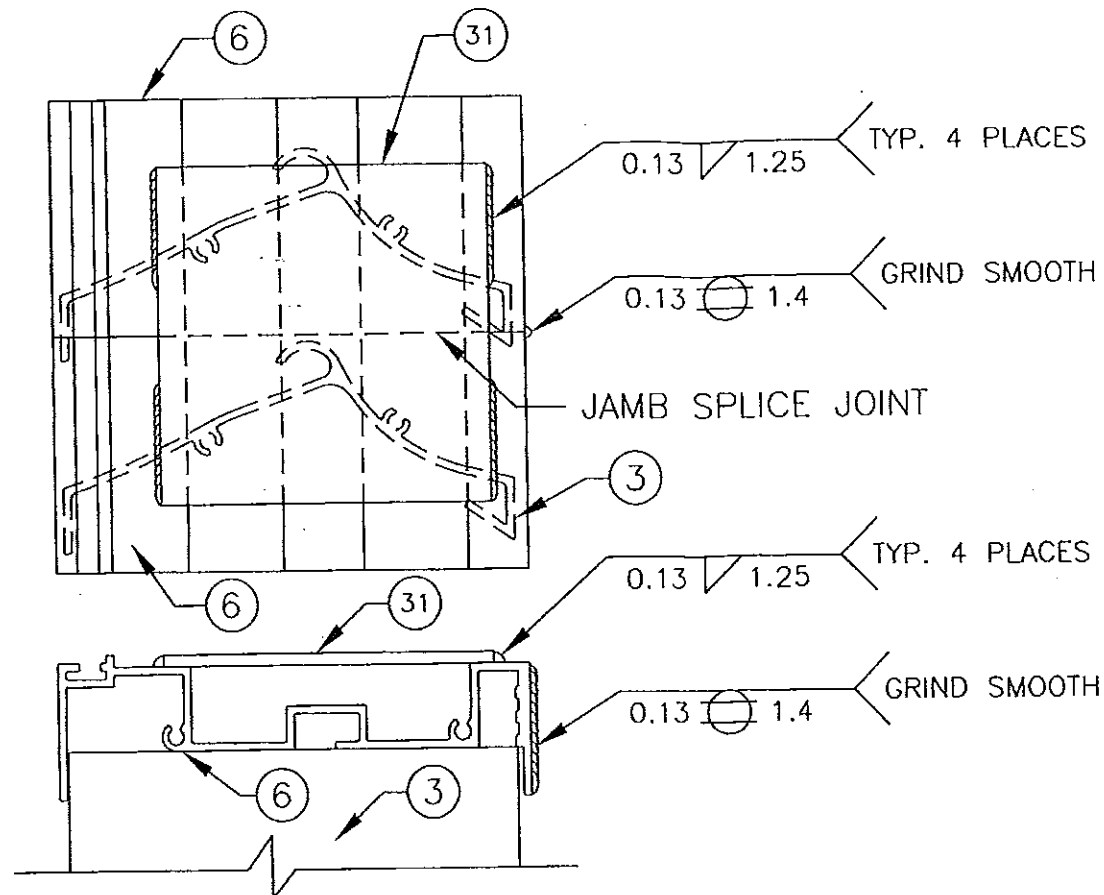
CHANDER P. NANGIA PE  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

NBG=NOT BY MANUFACTURER

 <b>GREENHECK</b> P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	DRAWN BY <b>M STEELE</b>	DATE <b>4/27/09</b>
TITLE  <b>ESS-502D LOUVER</b>  <b>SHAPE ELEVATIONS, DETAILS - SHAPE</b>	SCALE <b>VARIES</b>	
	SHEET NO. <b>11 OF 16</b>	
 <b>MAY 12 2009</b>	CAD DRAWING NO. <b>ESS-502D</b>	
	Approved as complying with the Florida Building Code Date <b>08/05/2009</b> NOA# <b>04-0519-14</b> Miami Dade Product Control Division By 	

12 A  
12

JAMB SPLICE DETAIL  
SCALE: 1:2



THIS IS ONLY ON SHAPE UNITS WHEN A CURVED EXTRUDED JAMB MEETS A STRAIGHT JAMB (THIS IS NOT FOR A "SPliced" UNIT WHERE ONE LOUVER SIT ON TOP OF ANOTHER).

DRAWN BY  
M STEELE

DATE  
4/27/09

SCALE  
1:2

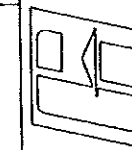
SHEET NO.  
12 OF 16

CAD DRAWING NO.  
ESS-502D

GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

TITLE  
ESS-502D LOUVER

SHAPE LOUVERS,  
DETAILS - SPICED JAMBS



*[Signature]*

MAY 12 2009

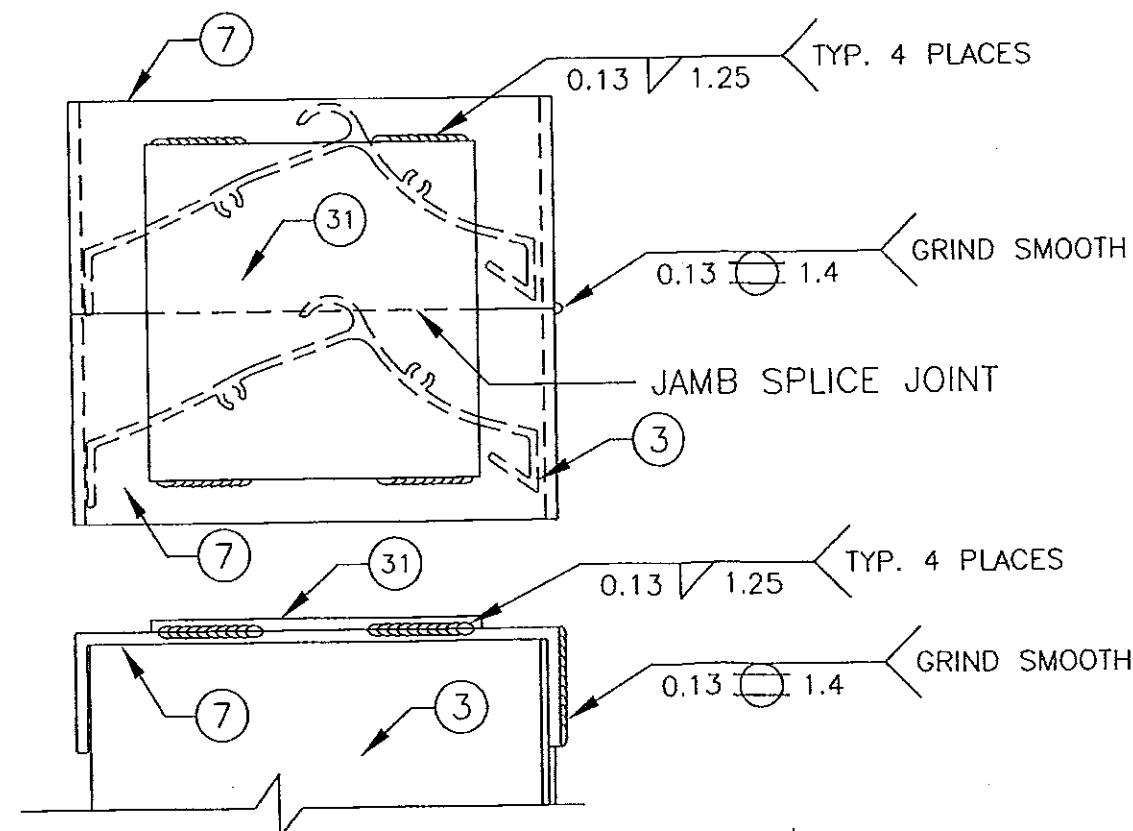
PRODUCT RENEWED  
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Acceptance No. 14-0624.16  
Expiration Date 05/05/2019  
By *[Signature]*  
Miami Dade Product Control

CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

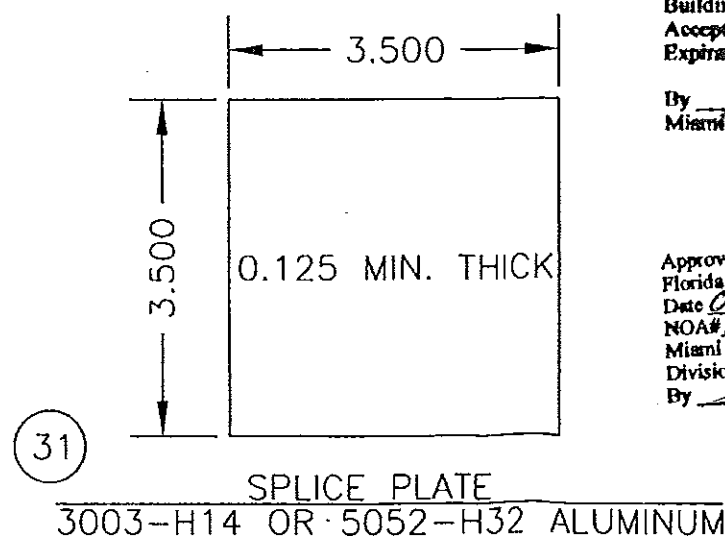
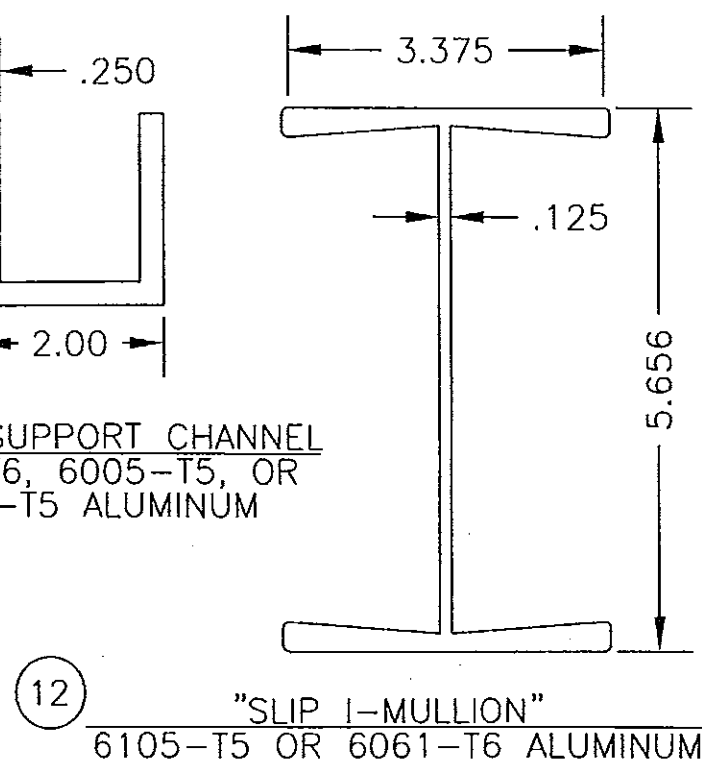
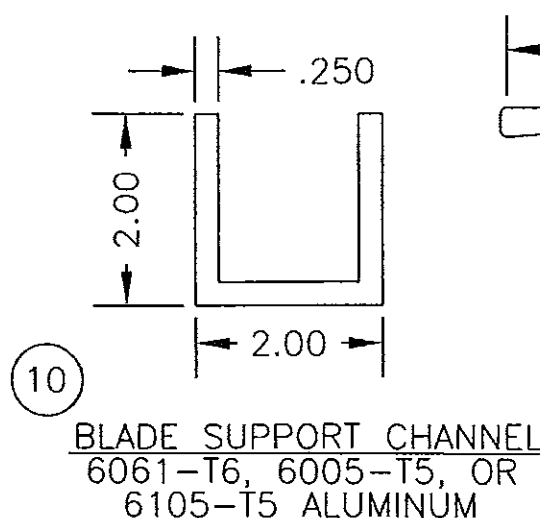
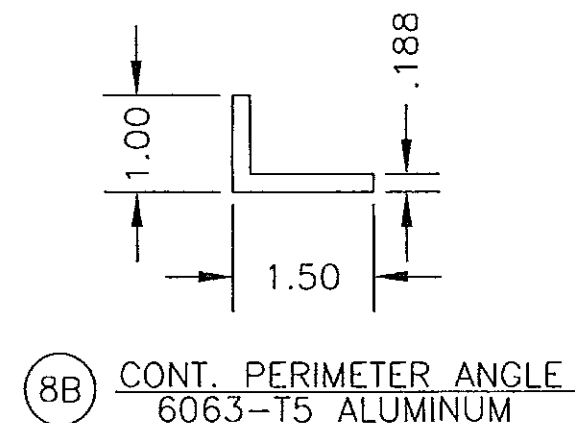
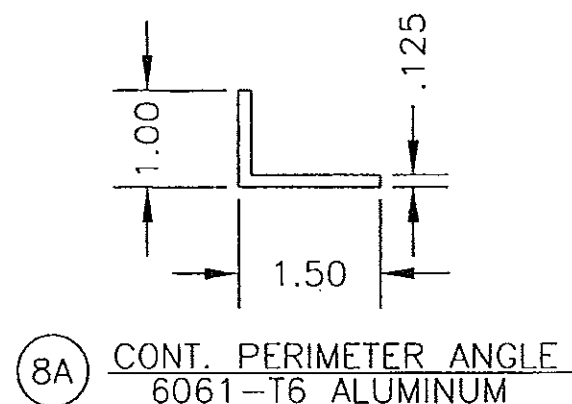
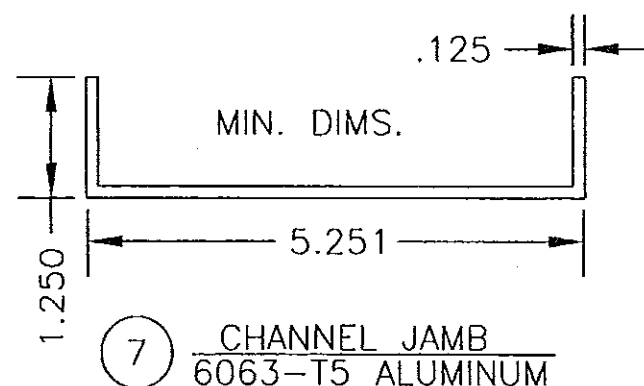
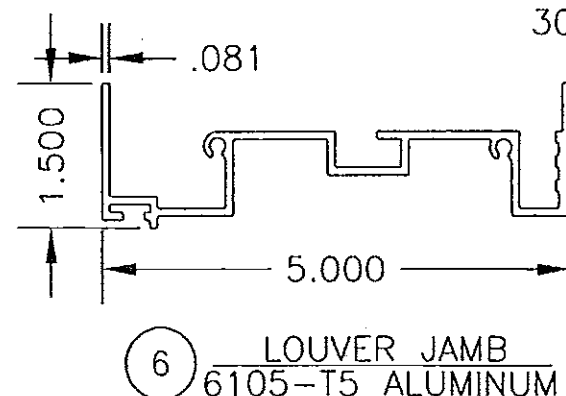
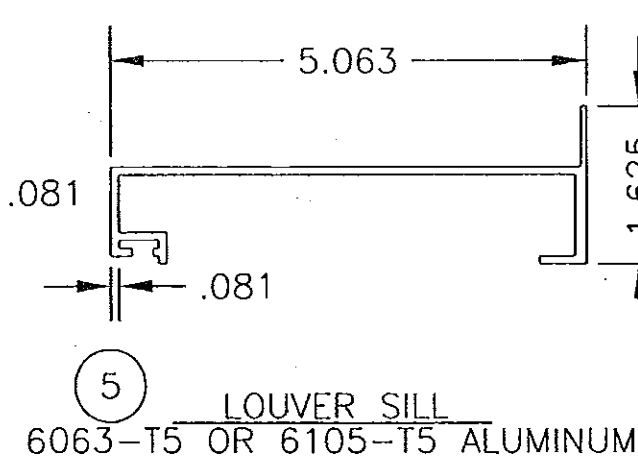
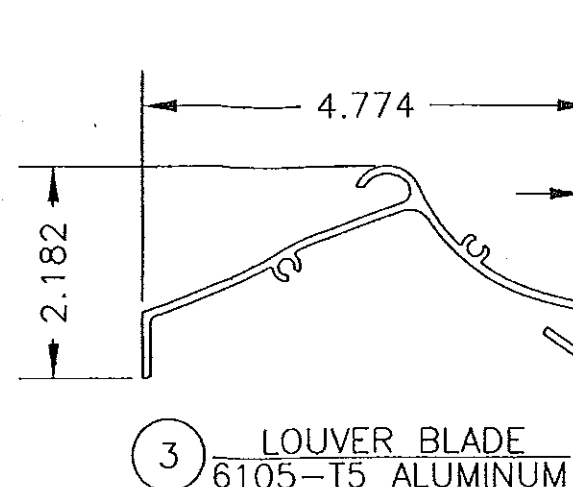
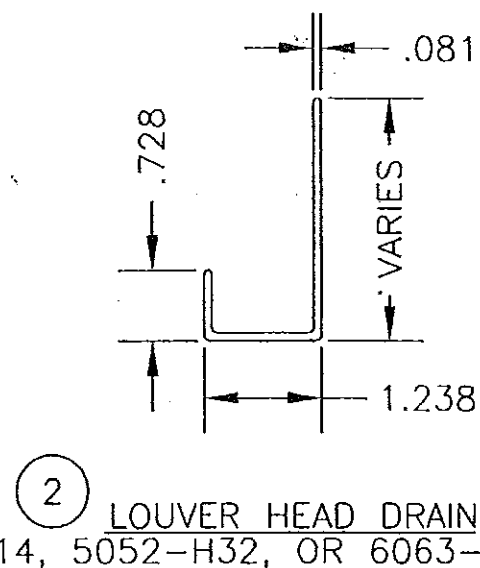
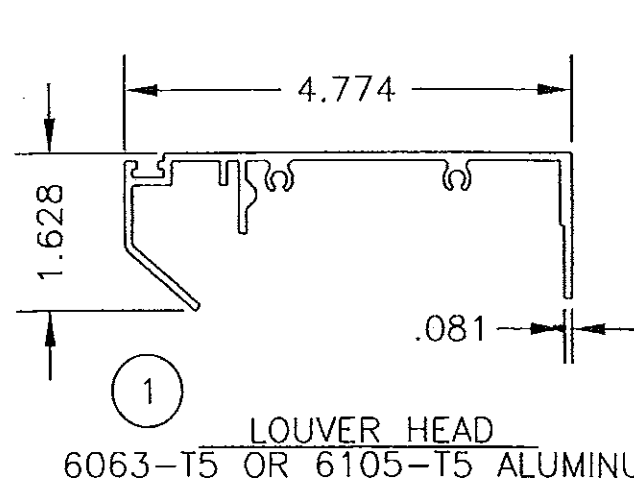
Approved as complying with the  
Florida Building Code  
Date 05/05/2009  
NOAH 12-0519.14  
Miami Dade Product Control  
Division  
By *[Signature]*

12 B  
12

CHANNEL JAMB SPLICE DETAIL  
SCALE: 1:2

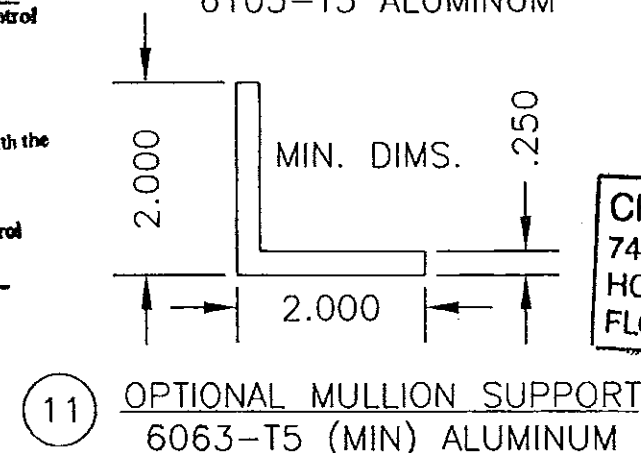
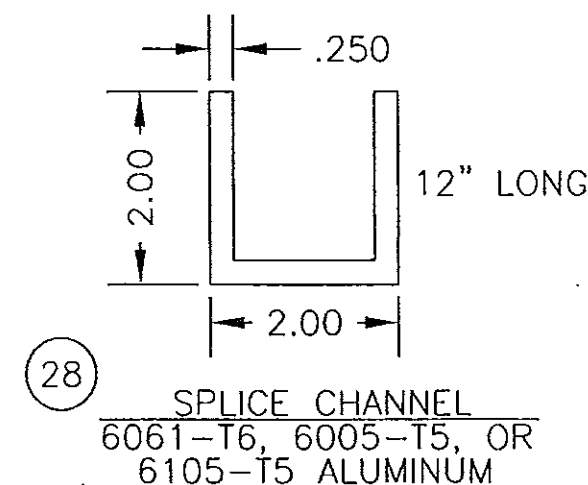


THIS IS ONLY ON SHAPE UNITS WHEN A CURVED C-CHANNEL JAMB MEETS A STRAIGHT JAMB (THIS IS NOT FOR A "SPliced" UNIT WHERE ONE LOUVER SIT ON TOP OF ANOTHER).



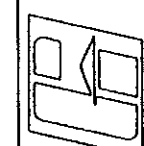
PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 12-0624-16  
Expiration Date 08/05/2019  
By [Signature]  
Miami Dade Product Control

Approved as complying with the  
Florida Building Code  
Date 08/05/2009  
NOA# 07-0519-14  
Miami Dade Product Control  
By [Signature]



CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410



ESS-502D LOUVER

DRAWN BY M STEELE  
DATE 4/27/09

SCALE 1:2

SHEET NO.

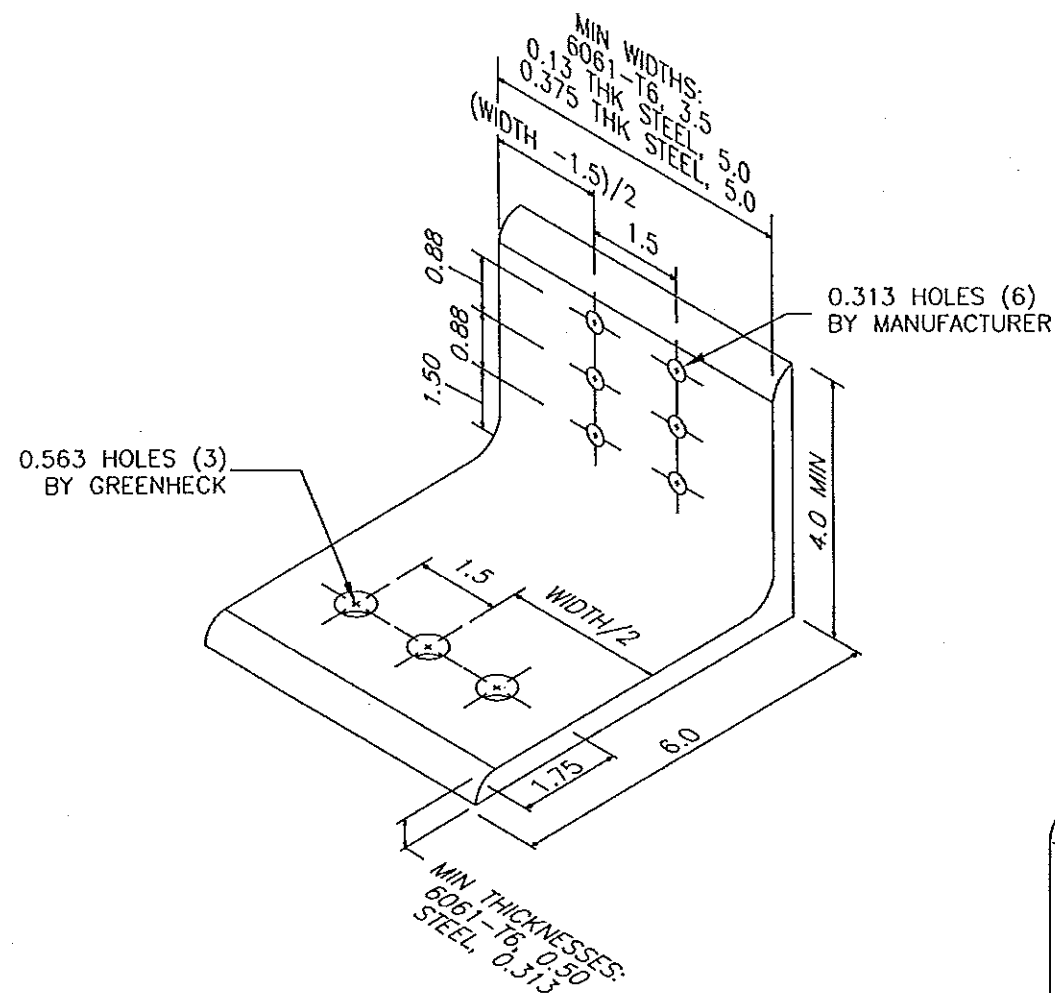
14 OF 16

CAD DRAWING NO.

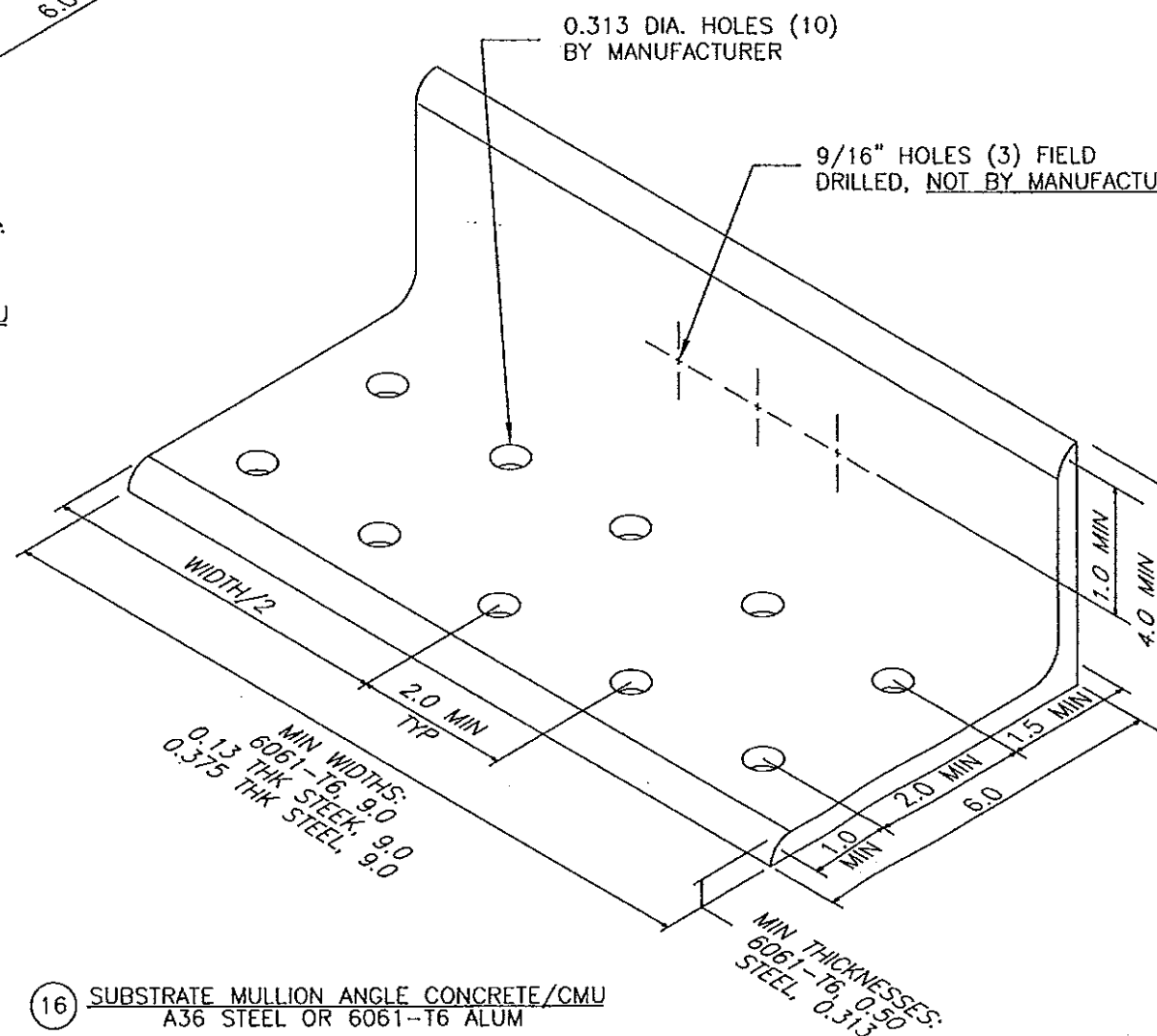
ESS-502D

DETAILS - PART DETAILS

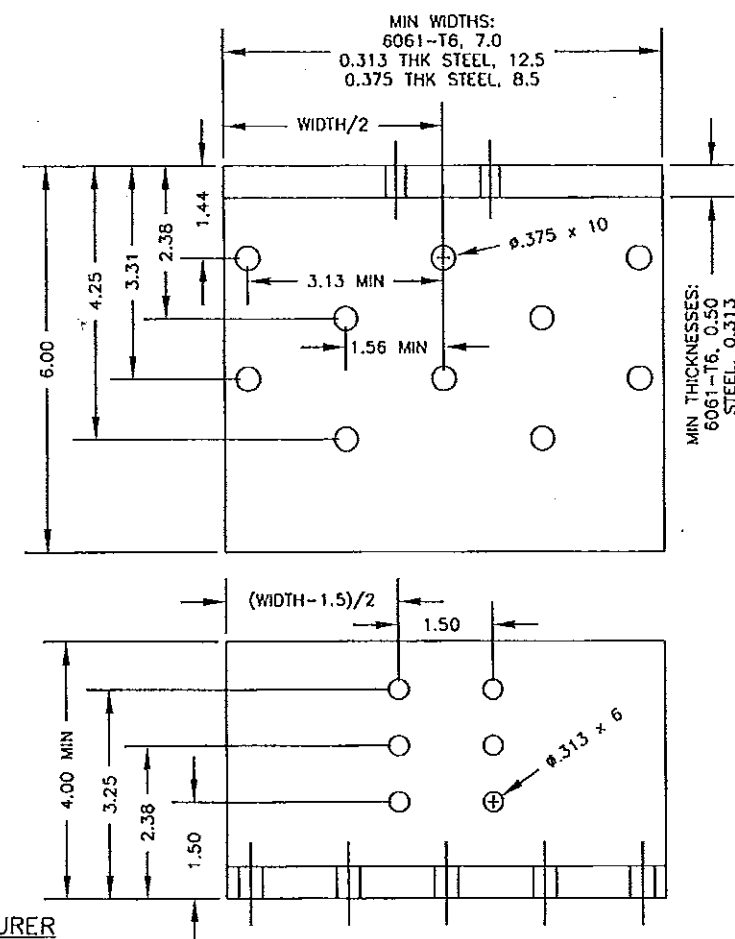
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MAY 12 2009



(15) LOUVER MULLION ANGLE CONCRETE/CMU  
A36 STEEL OR 6061-T6 ALUM



(16) SUBSTRATE MULLION ANGLE CONCRETE/CMU  
A36 STEEL OR 6061-T6 ALUM



(26) MULLION SUPPORT, WOOD  
6061-T6 ALUMINUM,  
OR A36 STEEL

PRODUCT RENEWED  
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CHANDER P. NANGIA, P.E.  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY M STEELE  
DATE 4/27/09

SCALE 1:2

SHEET NO.

15 OF 16

CAD DRAWING NO.

ESS-502D

GREENHECK  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

TITLE  
ESS-502D LOUVER

DETAILS - PART DETAILS

[Signature]  
MAY 12 2009

Approved as complying with the  
Florida Building Code  
Date 08/05/2009  
NOA# 09-0574-14  
Miami Dade Product Control  
By [Signature]



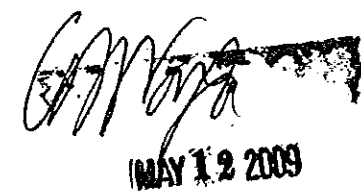
ITEM	DESCRIPTION	MATERIAL	NOTES
1	LOUVER HEAD	ALUM	
2	LOUVER HEAD DRAIN	ALUM	
3	LOUVER BLADE	ALUM	
4A	#10 x 0.5 MIN THREAD, SCREW, 7075-T6 ALUM	ALUM	USED ON ANODIZED UNITS
4B	#10 OR #12 x 0.5 MIN THREAD, SCREW, STAINLESS	SS	TYPICALLY USED
5	LOUVER SILL	ALUM	
6	LOUVER JAMB	ALUM	
7	OPTIONAL C-CHANNEL JAMB	ALUM	OPTIONAL FOR SHAPE UNITS
8A	CONTINUOUS MTG ANGLE, 1.0x1.5x0.125 MIN, 6061-T6	ALUM	
8B	CONTINUOUS MTG ANGLE, 1.0x1.5x0.188 MIN, 6063-T5	ALUM	
9	#10-24 OR #12-24 x 0.5 MIN THREAD, SCREW	SS	
10	BLADE SUPPORT CHANNEL, 2x2x2x0.25	ALUM	
11	OPTIONAL ADDITIONAL MULLION SUPPORT ANGLE	ALUM	OPTIONAL
12	SLIP "I" MULLION	ALUM	
13	GASKET, 3.5x4x0.25 MIN (BY MANUFACTURER)	VARIES	RUBBER/NEOPRENE LIKE
14	CONCRETE OR GROUT FILLED CMU, 2000 PSI MIN	VARIES	NOT BY MANUFACTURER
15	LOUVER MULLION ANGLE FOR CONCRETE/CMU	STEEL/ALUM	
16	SUBSTRATE MULLION ANGLE FOR CONCRETE/CMU	STEEL/ALUM	
17	0.25-20x1 MIN, SCREW (BY MANUFACTURER)	SS	
18	BOLT, 0.5-13x1 MIN (BY MANUFACTURER)	SS	
19	NUT, 0.5-13 MIN (BY MANUFACTURER)	SS	
20	WASHER, 0.5 MIN (BY MANUFACTURER)	SS	
21	0.25 DIA. ITW BUILDEX TAPCON w/ ADV. THREADFORM, 1.75 MIN EMBEDMENT	SS/STEEL	NOT BY MANUFACTURER
22	STRUCTURAL STEEL, 0.075 MIN THICKNESS	SS/STEEL	NOT BY MANUFACTURER
23	STEEL STUD, 14GA MIN	SS/STEEL	NOT BY MANUFACTURER
24	0.25 DIAMETER SCREW, MUST FULLY ENGAGE STEEL	SS/STEEL	NOT BY MANUFACTURER
25	WOOD SUBSTRATE, G=0.55 MIN DENSITY	WOOD	NOT BY MANUFACTURER
26	MULLION ANGLE FOR WOOD	STEEL/ALUM	
27	0.375 DIA. LAG SCREW, 3.0 MIN EMBEDMENT	SS/STEEL	NOT BY MANUFACTURER
28	SPLICE CHANNEL, 2x2x2x0.25, 12" LONG	ALUM	
29	BOLT, 0.313x2.5 MIN (BY MANUFACTURER)	SS	
30	NUT, 0.313(5X16) (BY MANUFACTURER)	SS	
31	SPLICE PLATE	ALUM	
32	SHIMS, OPTIONAL, AS REQUIRED, INCOMPRESSABLE	VARIES	NOT BY MANUFACTURER
33	SEALANT AND BACKER ROD	VARIES	NOT BY MANUFACTURER

# GENERAL NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS IMPOSED BY THE PENTHOUSE ASSEMBLY.
2. THE ESS-502D HAS BEEN DESIGNED AND QUALIFIED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE (FBC) AND TEST PROTOCOLS TAS-201 (IMPACT), TAS-202 (UNIFORM STATIC PRESSURE), AND TAS-203 (CYCLIC FATIGUE) TO A MAXIMUM DESIGN LOAD OF +/- 110 PSF.
3. THE MAXIMUM UNSUPPORTED BLADE LENGTH SHALL NOT EXCEED 72" WITHOUT STIFFENER AND 144" WITH STIFFENER.
4. THE MAXIMUM OVERALL UNIT HEIGHT IS UNLIMITED BY MEANS OF STACKING AND USE OF SPLICED BLADE SUPPORTS. THE MAXIMUM OVERALL UNIT WIDTH IS UNLIMITED BY USE OF MULLIONS WITH A MAXIMUM SPACING OF 72".
5. LOUVER CONSTRUCTION: HEAD, SILL, JAMBS, AND BLADES ARE SQUARE CUT AT BOTH ENDS. BLADE SPACING IS 2" MAX. EACH JAMB IS SECURED TO THE SILL WITH (2) SCREWS AND WELDED. BLADES AND HEADS ARE SECURED TO JAMBS WITH (2) SCREWS AND WELDED.
6. ALL WOOD SUBSTRATE SHALL BE G = 0.55 DENSITY OR BETTER.
7. ALL STEEL STUD SUBSTRATE SHALL BE MIN. 14 GA. FY = 50 KSI.
8. ALL STRUCTURAL STEEL SUBSTRATE SHALL BE MIN. 0.075" THICK FY = 36 KSI.
9. ALL CONCRETE SUBSTRATE SHALL BE MIN. 2000 PSI.
10. CONCRETE MASONRY SHALL BE ASTM C90, TYPE II, MIN. 2000 PSI GROUT-FILLED.
11. THE LOUVER MANUFACTURER DOES NOT DETERMINE THE STRUCTURAL INTEGRITY OF THE SUBSTRATE STRUCTURE.
12. THE SYSTEM SHALL ONLY BE INSTALLED IN A LOCATION WHERE THE ENCLOSED AREA/ROOM BEHIND THE LOUVER IS DESIGNED TO DRAIN WATER PENETRATING INTO THE AREA/ROOM, AND THE AREA/ROOM WILL HOUSE WATER RESISTANT/PROOF EQUIPMENT, COMPONENTS, AND/OR SUPPLIES.
13. INSTALLER TO PROVIDE SEPARATION OF DISSIMILAR MATERIALS AS REQUIRED.

PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No. 14-0624-16  
Expiration Date 08/05/2019  
By Chander P. Nangia  
Miami Dade Product Control

CHANDER P. NANGIA  
7423 HOLLOW RIDGE DR.  
HOUSTON, TX 77095  
FLORIDA PE # 21938

DRAWN BY M STEELE SCALE NA SHEET NO. 16 OF 16 CAD DRAWING NO. ESS-502D	DATE 4/27/09
	P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410 TITLE ESS-502D LOUVER ITEMIZED PART LISTING & GENERAL NOTES
 MAY 12 2009	
Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 14-0624-16 Miami Dade Product Control Division By <u>Chander P. Nangia</u>	